FEDERAL OPERATING PERMIT

A FEDERAL OPERATING PERMIT IS HEREBY ISSUED TO
OCI Beaumont LLC

AUTHORIZING THE OPERATION OF
OCI Beaumont
Industrial Organic Chemicals

LOCATED AT
Jefferson County, Texas
Latitude 30° 1' 3" Longitude 94° 2' 2"
Regulated Entity Number: RN102559291

This permit is issued in accordance with and subject to the Texas Clean Air Act (TCAA), Chapter 382 of the Texas Health and Safety Code and Title 30 Texas Administrative Code Chapter 122 (30 TAC Chapter 122), Federal Operating Permits. Under 30 TAC Chapter 122, this permit constitutes the permit holder's authority to operate the site and emission units listed in this permit. Operations of the site and emission units listed in this permit are subject to all additional rules or amended rules and orders of the Commission pursuant to the TCAA.

This permit does not relieve the permit holder from the responsibility of obtaining New Source Review authorization for new, modified, or existing facilities in accordance with 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification.

The site and emission units authorized by this permit shall be operated in accordance with 30 TAC Chapter 122, the general terms and conditions, special terms and conditions, and attachments contained herein.

This permit shall expire five years from the date of issuance. The renewal requirements specified in 30 TAC § 122.241 must be satisfied in order to renew the authorization to operate the site and emission units.

Permit No: O1645 Issuance Date: _____

_____
For the Commission

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General Terms and Conditions

The permit holder shall comply with all terms and conditions contained in 30 TAC § 122.143 (General Terms and Conditions), 30 TAC § 122.144 (Recordkeeping Terms and Conditions), 30 TAC § 122.145 (Reporting Terms and Conditions), and 30 TAC § 122.146 (Compliance Certification Terms and Conditions).

In accordance with 30 TAC § 122.144(1), records of required monitoring data and support information required by this permit, or any applicable requirement codified in this permit, are required to be maintained for a period of five years from the date of the monitoring report, sample, or application unless a longer data retention period is specified in an applicable requirement. The five year record retention period supersedes any less stringent retention requirement that may be specified in a condition of a permit identified in the New Source Review Authorization attachment.

If the permit holder chooses to demonstrate that this permit is no longer required, a written request to void this permit shall be submitted to the Texas Commission on Environmental Quality (TCEQ) by the Responsible Official in accordance with 30 TAC § 122.161(e). The permit holder shall comply with the permit's requirements, including compliance certification and deviation reporting, until notified by the TCEQ that this permit is voided.

The permit holder shall comply with 30 TAC Chapter 116 by obtaining a New Source Review authorization prior to new construction or modification of emission units located in the area covered by this permit.

All reports required by this permit must include in the submittal a cover letter which identifies the following information: company name, TCEQ regulated entity number, air account number (if assigned), site name, area name (if applicable), and Air Permits Division permit number(s).

Special Terms and Conditions:
Emission Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting

1. Permit holder shall comply with the following requirements:

    A. Emission units (including groups and processes) in the Applicable Requirements Summary attachment shall meet the limitations, standards, equipment specifications, monitoring, recordkeeping, reporting, testing, and other requirements listed in the Applicable Requirements Summary attachment to assure compliance with the permit.

    B. The textual description in the column titled "Textual Description" in the Applicable Requirements Summary attachment is not enforceable and is not deemed as a substitute for the actual regulatory language. The Textual Description is provided for information purposes only.

C. A citation listed on the Applicable Requirements Summary attachment, which has a notation [G] listed before it, shall include the referenced section and subsection for all commission rules, or paragraphs for all federal and state regulations and all subordinate paragraphs, subparagraphs and clauses, subclauses, and items contained within the referenced citation as applicable requirements.

D. When a grouped citation, notated with a [G] in the Applicable Requirements Summary, contains multiple compliance options, the permit holder must keep records of when each compliance option was used.

E. Emission units subject to 40 CFR Part 63, Subpart H as identified in the attached Applicable Requirements Summary table are subject to 30 TAC Chapter 113, Subchapter C, § 113.130 which incorporates the 40 CFR Part 63 Subpart by reference.

F. Emission units subject to 40 CFR Part 63, Subpart F as identified in the attached Applicable Requirements Summary table are subject to 30 TAC Chapter 113, Subchapter C, § 113.110 which incorporates the 40 CFR Part 63 Subpart by reference.

G. Emission units subject to 40 CFR Part 63, Subpart G as identified in the attached Applicable Requirements Summary table are subject to 30 TAC Chapter 113, Subchapter C, § 113.120 which incorporates the 40 CFR Part 63 Subpart by reference.

H. Emission units subject to 40 CFR Part 63, Subpart Y as identified in the attached Applicable Requirements Summary table are subject to 30 TAC Chapter 113, Subchapter C, § 113.300 which incorporates the 40 CFR Part 63 Subpart by reference.

I. Emission units subject to 40 CFR Part 63, Subpart ZZZZ as identified in the attached Applicable Requirements Summary table are subject to 30 TAC Chapter 113, Subchapter C, § 113.1090 which incorporates the 40 CFR Part 63 Subpart by reference.

2. The permit holder shall comply with the following sections of 30 TAC Chapter 101 (General Air Quality Rules):

A. Title 30 TAC § 101.1 (relating to Definitions), insofar as the terms defined in this section are used to define the terms used in other applicable requirements

B. Title 30 TAC § 101.3 (relating to Circumvention)

C. Title 30 TAC § 101.8 (relating to Sampling), if such action has been requested by the TCEQ

D. Title 30 TAC § 101.9 (relating to Sampling Ports), if such action has been requested by the TCEQ

E. Title 30 TAC § 101.10 (relating to Emissions Inventory Requirements)

F. Title 30 TAC § 101.201 (relating to Emission Event Reporting and Recordkeeping Requirements)

G. Title 30 TAC § 101.211 (relating to Scheduled Maintenance, Start-up, and Shutdown Reporting and Recordkeeping Requirements)

H. Title 30 TAC § 101.221 (relating to Operational Requirements)

I. Title 30 TAC § 101.222 (relating to Demonstrations)

J. Title 30 TAC § 101.223 (relating to Actions to Reduce Excessive Emissions)

3. Permit holder shall comply with the following requirements of 30 TAC Chapter 111:

A. Visible emissions from stationary vents with a flow rate of less than 100,000 actual cubic feet per minute and constructed after January 31, 1972 that are not listed in the Applicable Requirements Summary attachment for 30 TAC Chapter 111, Subchapter A, Division 1 , shall not exceed 20% opacity averaged over a six-minute period. The permit holder shall comply with the following requirements for stationary vents at the site subject to this standard:

(i) Title 30 TAC § 111.111(a)(1)(B) (relating to Requirements for Specified Sources)

(ii) Title 30 TAC § 111.111(a)(1)(E)

(iii) Title 30 TAC § 111.111(a)(1)(F)(i), (ii), (iii), or (iv)

(iv) For emission units with vent emissions subject to 30 TAC § 111.111(a)(1)(B), complying with 30 TAC § 111.111(a)(1)(F)(ii), (iii), or (iv), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO_x, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146. These periodic monitoring requirements do not apply to vents that are not capable of producing visible emissions such as vents that emit only colorless VOCs; vents from non-fuming liquids; vents that provide passive ventilation, such as plumbing vents; or vent emissions from any other source that does not obstruct the transmission of light. Vents, as specified in the

"Applicable Requirements Summary" attachment, that are subject to the emission limitation of 30 TAC § 111.111(a)(1)(B) are not subject to the following periodic monitoring requirements:

(1) An observation of stationary vents from emission units in operation shall be conducted at least once during each calendar quarter unless the emission unit is not operating for the entire quarter.

(2) For stationary vents from a combustion source, if an alternative to the normally fired fuel is fired for a period greater than or equal to 24 consecutive hours, the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are present. If such period is greater than 3 months, observations shall be conducted once during each quarter. Supplementing the normally fired fuel with natural gas or fuel gas to increase the net heating value to the minimum required value does not constitute creation of an alternative fuel.

(3) Records of all observations shall be maintained.

(4) Visible emissions observations of emission units operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations shall be made during times when the activities described in 30 TAC § 111.111(a)(1)(E) are not taking place. Visible emissions shall be determined with each stationary vent in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each stationary vent during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.

(5) Compliance Certification:

(a) If visible emissions are not present during the observation, the RO may certify that the source is in

compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(1) and (a)(1)(B).

(b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(1)(F) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.

(c) Some vents may be subject to multiple visible emission or monitoring requirements. All credible data must be considered when certifying compliance with this requirement even if the observation or monitoring was performed to demonstrate compliance with a different requirement.

B. For emission units with contributions from uncombined water, the permit holder shall comply with the requirements of 30 TAC § 111.111(b).

C. Emission limits on nonagricultural processes, except for the steam generators specified in 30 TAC § 111.153, shall comply with the following requirements:

(i) Emissions of PM from any source may not exceed the allowable rates as required in 30 TAC § 111.151(a) (relating to Allowable Emissions Limits)

(ii) Sources with an effective stack height (h_e) less than the standard effective stack height (H_e), must reduce the allowable emission level by multiplying it by $[h_e/H_e]^2$ as required in 30 TAC § 111.151(b)

(iii) Effective stack height shall be calculated by the equation specified in 30 TAC § 111.151(c)

D. Outdoor burning, as stated in 30 TAC § 111.201, shall not be authorized unless the following requirements are satisfied:

(i) Title 30 TAC § 111.207 (relating to Exception for Recreation, Ceremony, Cooking, and Warmth)

(ii) Title 30 TAC § 111.219 (relating to General Requirements for Allowable Outdoor Burning)

(iii) Title 30 TAC § 111.221 (relating to Responsibility for Consequences of Outdoor Burning)

4. For industrial wastewater specified in 30 TAC Chapter 115, Subchapter B, the permit holder shall comply with 40 CFR Part 63, Subpart G as specified in 30 TAC § 115.143(c)(1) - (3).

5. The permit holder shall comply with the following requirements of 30 TAC Chapter 115, Subchapter F, Division 3, Degassing of Storage Tanks, Transport Vessels and Marine Vessels:

A. For degassing of stationary VOC storage tanks, the permit holder shall comply with the following requirements as applicable:

(i) Title 30 TAC § 115.541(a) - (c) (relating to Emission Specifications)

(ii) Title 30 TAC § 115.541(f) (relating to Emission Specifications), for floating roof storage tanks

(iii) Title 30 TAC § 115.542(a) and (a)(1), (a)(2), (a)(3) or (a)(4) (relating to Control Requirements). Where the requirements of 30 TAC Chapter 115, Subchapter F contain multiple compliance options, the permit holder shall keep records of when each compliance option was used.

(iv) Title 30 TAC § 115.542(b) - (d), (relating to Control Requirements)

(v) Title 30 TAC § 115.543 (relating to Alternate Control Requirements)

(vi) Title 30 TAC § 115.544(a)(1) and (a)(2) (relating to Inspection, Monitoring, and Testing Requirements), for inspections

(vii) Title 30 TAC § 115.544(b) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring

(viii) Title 30 TAC § 115.544(b)(1) and (b)(2) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring of control devices

(ix) Title 30 TAC § 115.544(b)(2)(A) - (J) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring (as appropriate to the control device)

(x) Title 30 TAC § 115.544(b)(3), (b)(4), (b)(5) and (b)(6) (relating to Inspection, Monitoring, and Testing Requirements), for VOC concentration or lower explosive limit threshold monitoring

(xi) Title 30 TAC § 115.544(c), and (c)(1) - (c)(3) (relating to Inspection, Monitoring, and Testing Requirements), for testing of control devices used to comply with 30 TAC § 115.542(a)(1)

(xii) Title 30 TAC § 115.545(1) - (7), (9) - (11) and (13) - (15) (relating to Approved Test Methods)

(xiii) Title 30 TAC § 115.546(a), (a)(1) and (a)(3) (relating to Recordkeeping and Notification Requirements), for recordkeeping

(xiv) Title 30 TAC § 115.546(a)(2) and (a)(2)(A) - (J) (relating to Recordkeeping and Notification Requirements), for recordkeeping (as appropriate to the control device)

(xv) Title 30 TAC § 115.546(a)(4) and (a)(5) (relating to Recordkeeping and Notification Requirements), for recordkeeping of testing of control devices used to comply with 30 TAC § 115.542(a)(1)

(xvi) Title 30 TAC § 115.547(1) - (4), and (6) (relating to Exemptions)

6. The permit holder shall comply with the following requirements for units subject to any subpart of 40 CFR Part 61, unless otherwise stated in the applicable subpart:

A. Title 40 CFR § 61.05 (relating to Prohibited Activities)

B. Title 40 CFR § 61.07 (relating to Application for Approval of Construction or Modification)

C. Title 40 CFR § 61.09 (relating to Notification of Start-up)

D. Title 40 CFR § 61.10 (relating to Source Reporting and Request Waiver)

E. Title 40 CFR § 61.12 (relating to Compliance with Standards and Maintenance Requirements)

F. Title 40 CFR § 61.13 (relating to Emissions Tests and Waiver of Emission Tests)

G. Title 40 CFR § 61.14 (relating to Monitoring Requirements)

H. Title 40 CFR § 61.15 (relating to Modification)

I. Title 40 CFR § 61.19 (relating to Circumvention)

7. The permit holder shall comply with the requirements of 30 TAC Chapter 113, Subchapter C, § 113.100 for units subject to any subpart of 40 CFR Part 63, unless otherwise stated in the applicable subpart.

8. For the chemical manufacturing process specified in 40 CFR Part 63, Subpart F, the permit holder shall comply with 40 CFR § 63.103(a) (relating to General Compliance, Reporting, and Recordkeeping Provisions) (Title 30 TAC Chapter 113, Subchapter C, § 113.110 incorporated by reference).

9. For the chemical manufacturing facilities with a 40 CFR Part 63, Subpart G Group 2 wastewater stream, the permit holder shall comply with (Title 30 TAC Chapter 113, Subchapter C, § 113.120 incorporated by reference):

A. Title 40 CFR § 63.132(a), (a)(1), (a)(1)(i), (a)(1)(iii) and (a)(3) (relating to Process Wastewater Provisions - General)

B. Title 40 CFR § 63.146(b) and (b)(1) (relating to Process Wastewater Provisions - Reporting)

C. Title 40 CFR § 63.147(b) and (b)(8) (relating to Process Wastewater Provisions - Recordkeeping)

10. Process gas streams used as fuel gas shall comply with the requirements of § 63.107 as applicable.

11. For the chemical manufacturing facilities subject to leak detection requirements in 40 CFR Part 63, Subpart G, the permit holder shall comply with the following requirements (Title 30 TAC Chapter 113, Subchapter C, § 113.120 incorporated by reference):

A. General Leak Detection Requirements:

(i) Title 40 CFR § 63.148(a), (d), and (e) (relating to Leak Inspection Provisions)

(ii) Title 40 CFR § 63.148(c), (g), (g)(2), (h), and (k) (relating to Leak Inspection Provisions), for monitoring and testing requirements

(iii) Title 40 CFR §§ 63.148(g)(2), (h)(2), (i)(1) - (2), (i)(4)(i) - (viii), (i)(5), and 63.152(a)(1), (a)(3) - (5), for recordkeeping requirements

(iv) Title 40 CFR §§ 63.148(j), 63.151(a)(1), (a)(3) - (5), (a)(7), (b)(1) - (2)(i)-(ii), (j)(1) - (3), 63.152(a)(1), (a)(3) - (5), (b), (b)(1)(i) - (ii), and (b)(4), for reporting requirements

B. For closed vent system or vapor collection systems constructed of hard piping:

(i) Title 40 CFR § 63.148(b)(1)(i) - (ii) (relating to Leak Inspection Provisions), for monitoring and testing requirements

(ii) Title 40 CFR § 63.148(i)(6) (relating to Leak Inspection Provisions), for recordkeeping requirements

C. For facilities not operating flow indicators:

(i) Title 40 CFR § 63.148(f) and (f)(2) - (3) (relating to Leak Inspection Provisions), for monitoring and testing requirements

(ii) Title 40 CFR § 63.148(i)(3)(ii) (relating to Leak Inspection Provisions), for recordkeeping requirements

(iii) Title 40 CFR § 63.148(j) (relating to Leak Inspection Provisions), for reporting requirements

12. For the chemical manufacturing facilities subject to transfer operations requirements in 40 CFR Part 63, Subpart G, the permit holder shall comply with the following requirements (Title 30 TAC Chapter 113, Subchapter C, § 113.120 incorporated by reference):

A. Title 40 CFR § 63.126(e)(1) - (2), and (f) (relating to Transfer Operations Provisions Reference Control Technology)

B. Title 40 CFR § 63.128(f)(1) - (2) (relating to Transfer Operations Provisions - Test Methods and Procedures)

C. Title 40 CFR § 63.130(e) (relating to Transfer Operations Provisions - Periodic Recordkeeping and Reporting)

13. For the chemical manufacturing facilities subject to wastewater operations requirements in 40 CFR Part 63, Subpart G, the permit holder shall comply with the following requirements as applicable (Title 30 TAC Chapter 113, Subchapter C, § 113.120 incorporated by reference):

A. Title 40 CFR § 63.135(a) - (c), (e) and (f) (relating to Process Wastewater Provisions - Containers)

14. For the operations pertaining to the loading and unloading of marine tank vessels specified in 40 CFR Part 63, Subpart Y, the permit holder shall comply with the following requirements (Title 30 TAC Chapter 113, Subchapter C, § 113.300 incorporated by reference):

A. Title 40 CFR § 63.560(c), (e) (relating to Designation of Affected Source), for applicability of the General Provisions of Subpart A

B. Title 40 CFR § 63.563(a)(1) - (3), (a)(4)(iv), (b), (b)(1), (b)(3), (b)(5), (b)(10) and (c) (relating to Compliance and Performance Testing), for vapor tightness requirements of the marine vessels

C. Title 40 CFR § 63.564(a)(1) - (4), (b), (b)(3), (c), (d), (f) and (i) (relating to Monitoring Requirements)

D. Title 40 CFR § 63.565(a), (b), (e) and (l) (relating to Test Methods and Procedures), for performance testing requirements

E. Title 40 CFR § 63.566 (relating to Construction and Reconstruction)

F. Title 40 CFR § 63.567(a) - (b), (b)(3) - (5), (d) - (f), (g), (g)(2), (j)(2) - (4), (k), (m) and (n) (relating to Reporting and Recordkeeping Requirements)

Additional Monitoring Requirements

15. The permit holder shall comply with the periodic monitoring requirements as specified in the attached "Periodic Monitoring Summary" upon issuance of the permit. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permit holder shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. The permit holder may elect to collect monitoring data on a more frequent basis and average the data, consistent with the averaging time specified in the "Periodic Monitoring Summary," for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis. In no event shall data be collected and used in particular instances to avoid reporting deviations. Deviations shall be reported according to 30 TAC § 122.145 (Reporting Terms and Conditions).

New Source Review Authorization Requirements

16. Permit holder shall comply with the requirements of New Source Review authorizations issued or claimed by the permit holder for the permitted area, including permits, permits by rule, standard permits, flexible permits, special permits, permits for existing facilities including Voluntary Emissions Reduction Permits and Electric Generating Facility Permits issued under 30 TAC Chapter 116, Subchapter I, or special exemptions referenced in the New Source Review Authorization References attachment. These requirements:

A. Are incorporated by reference into this permit as applicable requirements

B. Shall be located with this operating permit

C. Are not eligible for a permit shield

17. The permit holder shall comply with the general requirements of 30 TAC Chapter 106, Subchapter A or the general requirements, if any, in effect at the time of the claim of any PBR.

18. The permit holder shall maintain records to demonstrate compliance with any emission limitation or standard that is specified in a permit by rule (PBR) or Standard Permit listed in the New Source Review Authorizations attachment. The records shall yield reliable data from the relevant time period that are representative of the emission unit's compliance with the PBR or Standard Permit. These records may include, but are not limited to, production capacity and throughput, hours of operation, safety data sheets (SDS), chemical composition of raw materials, speciation of air contaminant data, engineering calculations, maintenance records, fugitive data, performance tests, capture/control device efficiencies, direct pollutant monitoring (CEMS, COMS, or PEMS), or control device parametric monitoring. These records shall be made readily accessible and available as required by 30 TAC § 122.144. Any monitoring or recordkeeping data indicating noncompliance with the PBR or Standard Permit shall be considered and reported as a deviation according to 30 TAC § 122.145 (Reporting Terms and Conditions).

Compliance Requirements

19. The permit holder shall certify compliance in accordance with 30 TAC § 122.146. The permit holder shall comply with 30 TAC § 122.146 using at a minimum, but not limited to, the continuous or intermittent compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information. The certification period may not exceed 12 months and the certification must be submitted within 30 days after the end of the period being certified.

20. Permit holder shall comply with the following 30 TAC Chapter 117 requirements:

    A. The permit holder shall comply with the compliance schedules and submit written notification to the TCEQ Executive Director as required in 30 TAC Chapter 117, Subchapter H, Division 1:

        (i) For sources in the Beaumont-Port Arthur Nonattainment area, 30 TAC § 117.9000

    B. The permit holder shall comply with the Initial Control Plan unit listing requirement in 30 TAC § 117.150(c) and (c)(1).

Risk Management Plan

21. For processes subject to 40 CFR Part 68 and specified in 40 CFR § 68.10, the permit holder shall comply with the requirements of the Accidental Release Prevention Provisions in 40 CFR Part 68. The permit holder shall submit to the appropriate agency either a compliance schedule for meeting the requirements of

40 CFR Part 68 by the date provided in 40 CFR § 68.10(a), or as part of the compliance certification submitted under this permit, a certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of a risk management plan.

Protection of Stratospheric Ozone

22. Permit holders at a site subject to Title VI of the FCAA Amendments shall meet the following requirements for protection of stratospheric ozone.

    A. Any on site servicing, maintenance, and repair on refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants or non-exempt substitutes shall be conducted in accordance with 40 CFR Part 82, Subpart F. Permit holders shall ensure that repairs on or refrigerant removal from refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants are performed only by properly certified technicians using certified equipment. Records shall be maintained as required by 40 CFR Part 82, Subpart F.

    B. The permit holder shall comply with 40 CFR Part 82, Subpart H related to Halon Emissions Reduction requirements as specified in 40 CFR § 82.250 - § 82.270 and the applicable Part 82 Appendices.

Permit Location

23. The permit holder shall maintain a copy of this permit and records related to requirements listed in this permit on site.

Permit Shield (30 TAC § 122.148)

24. A permit shield is granted for the emission units, groups, or processes specified in the attached "Permit Shield." Compliance with the conditions of the permit shall be deemed compliance with the specified potentially applicable requirements or specified potentially applicable state-only requirements listed in the attachment "Permit Shield." Permit shield provisions shall not be modified by the executive director until notification is provided to the permit holder. No later than 90 days after notification of a change in a determination made by the executive director, the permit holder shall apply for the appropriate permit revision to reflect the new determination. Provisional terms are not eligible for this permit shield. Any term or condition, under a permit shield, shall not be protected by the permit shield if it is replaced by a provisional term or condition or the basis of the term and condition changes.

Attachments

Applicable Requirements Summary

Additional Monitoring Requirements

Permit Shield

New Source Review Authorization References

Applicable Requirements Summary

Note: A "none" entry may be noted for some emission sources in this permit's "Applicable Requirements Summary" under the heading of "Monitoring and Testing Requirements" and/or "Recordkeeping Requirements" and/or "Reporting Requirements." Such a notation indicates that there are no requirements for the indicated emission source as identified under the respective column heading(s) for the stated portion of the regulation when the emission source is operating under the conditions of the specified SOP Index Number. However, other relevant requirements pursuant to 30 TAC Chapter 122 including Recordkeeping Terms and Conditions (§ 122.144), Reporting Terms and Conditions (§ 122.145), and Compliance Certification Terms and Conditions (§ 122.146) continue to apply.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
AMMFLARE	Flares	N/A	111FL-1	30 TAC Chapter 111, Visible Emissions	No changing attributes.
ATK2FLR	Flares	N/A	R111-F-1	30 TAC Chapter 111, Visible Emissions	No changing attributes.
CRTK	Storage Tanks/Vessels	N/A	115TK-5	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
CRTK	Storage Tanks/Vessels	N/A	63G-TK4	40 CFR Part 63, Subpart G	Emission Control Type = Closed vent system (CVS) and control device (fixed roof), Control Device Design = The control device was not installed on or before December 31, 1992 or was not designed to reduce inlet emissions of total organic hazardous air pollutants by greater than or equal to 90% and less than 95%., Control Device Type = Control device other than a flare, thermal incinerator, boiler, process heater, enclosed combustion device meeting residence time and temperature requirements, carbon adsorber, condenser or hazardous waste incinerator., Design Evaluation Submitted = A design evaluation of the emission control system was submitted to demonstrate compliance with 40 CFR § 63.119(e).

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
CRTK	Storage Tanks/Vessels	N/A	63G-TK5	40 CFR Part 63, Subpart G	Emission Control Type = Emissions routed to a process
DOCK	Loading/Unloading Operations	N/A	63Y-1	40 CFR Part 63, Subpart Y	No changing attributes.
FL-42	Flares	N/A	111FL-5	30 TAC Chapter 111, Visible Emissions	No changing attributes.
FLARE	Flares	N/A	111FL-2	30 TAC Chapter 111, Visible Emissions	No changing attributes.
GRPMETPR	Emission Points/Stationary Vents/Process Vents	N/A	R5121-1	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.
GRPTVLOAD1	Loading/Unloading Operations	TVLDOILME, TVLDOILNH, TVLDOILRFP, TVLDOILSNC, TVLDOILSNT, TVLDUSDOIL	R5211-1	30 TAC Chapter 115, Loading and Unloading of VOC	No changing attributes.
GRPTVLOAD2	Loading/Unloading Operations	TVLDBFWCI, TVLDCWME, TVLDCWMEAF, TVLDCWMECI, TVLDCWMEIN, TVLDCWNH, TVLDCWNHCI, TVLDFUELDW	R5211-2	30 TAC Chapter 115, Loading and Unloading of VOC	No changing attributes.
GRPTVLOAD3	Loading/Unloading Operations	TVLDCRTK, TVLDREFREC	R5211-3	30 TAC Chapter 115, Loading and Unloading of	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
				VOC	
HR401	Emission Points/Stationary Vents/Process Vents	N/A	R1111-2	30 TAC Chapter 111, Visible Emissions	No changing attributes.
HR402	Emission Points/Stationary Vents/Process Vents	N/A	R1111-3	30 TAC Chapter 111, Visible Emissions	No changing attributes.
HTR324	Process Heaters/Furnaces	N/A	117-3	30 TAC Chapter 117, Subchapter B	No changing attributes
HTR-324	Emission Points/Stationary Vents/Process Vents	N/A	111-3	30 TAC Chapter 111, Visible Emissions	No changing attributes.
MEOHTRK	Loading/Unloading Operations	N/A	R5211-4	30 TAC Chapter 115, Loading and Unloading of VOC	No changing attributes.
MEOHTRK	Loading/Unloading Operations	N/A	63G-LD1	40 CFR Part 63, Subpart G	No changing attributes.
MET/PRC246	Chemical Manufacturing Process	N/A	63F-2	40 CFR Part 63, Subpart F	No changing attributes.
MET/PRC247	Fugitive Emission Units	N/A	115FUG-2	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	No changing attributes.
MET/PRC247	Fugitive Emission Units	N/A	63H-FUG2	40 CFR Part 63, Subpart H	No changing attributes.
MET-COM48	Emission Points/Stationary	N/A	111-6	30 TAC Chapter 111, Visible Emissions	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
	Vents/Process Vents				
MET-PMP274	Stationary Reciprocating Internal Comb. Engines	N/A	117-4	30 TAC Chapter 117, Subchapter B	No changing attributes.
MET-PMP274	Stationary Reciprocating Internal Comb. Engines	N/A	63ZZZZ-1	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
MET-STK44	Emission Points/Stationary Vents/Process Vents	N/A	111-1	30 TAC Chapter 111, Visible Emissions	No changing attributes.
MET-TFL50	Storage Tanks/Vessels	N/A	115TK-1	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
MET-TFL50	Storage Tanks/Vessels	N/A	63G-TK1	40 CFR Part 63, Subpart G	No changing attributes.
MET-TFX46	Storage Tanks/Vessels	N/A	115TK-2	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
MET-TFX46	Storage Tanks/Vessels	N/A	63G-TK5	40 CFR Part 63, Subpart G	No changing attributes.
MVCS FLARE	Flares	N/A	111FL-4	30 TAC Chapter 111, Visible Emissions	No changing attributes.
MVCS FLARE	Flares	N/A	63A-4	40 CFR Part 63, Subpart A	No changing attributes.
MVCSFUG	Fugitive Emission Units	N/A	115FUG-3	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	No changing attributes.
MVCSFUG	Fugitive Emission Units	N/A	63H-FUG3	40 CFR Part 63, Subpart H	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
OWS325	Volatile Organic Compound Water Separators	N/A	115WS-1	30 TAC Chapter 115, Water Separation	No changing attributes.
PRO-MEOH	Chemical Manufacturing Process	N/A	63F-1	40 CFR Part 63, Subpart F	No changing attributes.
STK-41	Emission Points/Stationary Vents/Process Vents	N/A	111-2	30 TAC Chapter 111, Visible Emissions	No changing attributes.
TFX-33	Storage Tanks/Vessels	N/A	115TK-3	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
TFX-33	Storage Tanks/Vessels	N/A	63G-TK2	40 CFR Part 63, Subpart G	No changing attributes.
TFX-34	Storage Tanks/Vessels	N/A	115TK-4	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
TFX-34	Storage Tanks/Vessels	N/A	63G-TK3	40 CFR Part 63, Subpart G	No changing attributes.
TKFLARE	Flares	N/A	111FL-3	30 TAC Chapter 111, Visible Emissions	No changing attributes.
TVT3	Storage Tanks/Vessels	N/A	115TK-6	30 TAC Chapter 115, Storage of VOCs	No changing attributes.

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
AMMFLARE	EU	111FL-1	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period, except for emission event emissions as provided in §101.222(b).	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None
ATK2FLR	EU	R111-F-1	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period, except for emission event emissions as provided in §101.222(b).	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None
CRTK	EU	115TK-5	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a) § 115.112(a)(1) § 115.112(a)(3)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.115(a) § 115.115(a)(6) § 115.116(a) § 115.116(a)(1) § 115.117 § 115.117(1) § 115.117(11) § 115.117(12) § 115.117(2) § 115.117(5) § 115.117(6) § 115.117(8) § 115.118(a)(5) § 115.118(a)(7)	§ 115.118(a) § 115.118(a)(4) § 115.118(a)(4)(F) § 115.118(a)(5) § 115.118(a)(7)	None
CRTK	EU	63G-TK4	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.119(e) § 63.119(a)(1) § 63.119(e)(1) § 63.119(e)(3) § 63.119(e)(4) § 63.119(e)(5)	The owner or operator who elects to use a closed vent system and control device (defined in § 63.111) to comply with§63.119(a)(1) or (a)(2) shall comply with	§ 63.120(d)(1) § 63.120(d)(5) § 63.120(d)(6)	§ 63.120(d)(1)(i) § 63.120(d)(1)(i)(A) § 63.123(a) § 63.123(f)(1) [G]§ 63.123(f)(2)	§ 63.120(d)(1) § 63.120(d)(2) § 63.120(d)(2)(i) § 63.120(d)(2)(ii) § 63.120(d)(3) § 63.120(d)(3)(i) § 63.120(d)(4)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						§63.119(e)(1)-(5).			§ 63.122(b) § 63.122(c)(1) [G]§ 63.122(g)(1) [G]§ 63.122(g)(2)
CRTK	EU	63G-TK5	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.119(f) § 63.119(a)(1) [G]§ 63.119(f)(3)	Owner or operator who routes emissions to a fuel gas system or to a process, as defined in §63.111, to comply with §63.119(a)(1), or (a)(2) shall comply with §63.119(f)(1)-(3) as applicable.	None	§ 63.123(a) [G]§ 63.123(h) [G]§ 63.152(a)	§ 63.122(c)(3) § 63.151(a)(7) [G]§ 63.151(b) [G]§ 63.151(j) [G]§ 63.152(a) § 63.152(b) [G]§ 63.152(b)(1) § 63.152(b)(4) § 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(4)(ii)
DOCK	EU	63Y-1	112(B) HAPS	40 CFR Part 63, Subpart Y	§ 63.562(b) § 63.562(a) [G]§ 63.562(b)(1) § 63.562(b)(3) [G]§ 63.562(b)(6) [G]§ 63.562(e)	Existing sources with emissions less than 10 and 25 tons are not subject to the emissions standards in §63.562(b) and (d).	[G]§ 63.562(b)(6)	[G]§ 63.562(b)(6) § 63.562(e)(5)	[G]§ 63.562(b)(6)
FL-42	EU	111FL-5	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period, except for emission event emissions as provided in §101.222(b).	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None
FLARE	EU	111FL-2	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period, except for emission event emissions as	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						provided in §101.222(b).			
GRPMETPR	EP	R5121-1	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.121(a)(1) § 115.122(a)(1) § 115.122(a)(1)(A)	No person may allow a vent gas stream containing VOC to be emitted from any process vent, unless the vent gas stream is burned properly in accordance with §115.122(a)(1) of this title.	[G]§ 115.125 § 115.126(1) § 115.126(1)(A) § 115.126(1)(A)(i) § 115.126(2) ** See Periodic Monitoring Summary	§ 115.126 § 115.126(1) § 115.126(1)(A) § 115.126(1)(A)(i) § 115.126(2)	None
GRPTVLOAD1	EU	R5211-1	VOC	30 TAC Chapter 115, Loading and Unloading of VOC	§ 115.217(a)(1) § 115.212(a)(2) § 115.214(a)(1)(B) § 115.214(a)(1)(D) § 115.214(a)(1)(D)(i)	Vapor pressure (at land-based operations). All land-based loading and unloading of VOC with a true vapor pressure less than 0.5 psia is exempt from the requirements of this division, except as specified.	§ 115.214(a)(1)(A) § 115.214(a)(1)(A)(i) § 115.215 § 115.215(4)	§ 115.216 § 115.216(2) § 115.216(3)(B)	None
GRPTVLOAD2	EU	R5211-2	VOC	30 TAC Chapter 115, Loading and Unloading of VOC	§ 115.217(a)(1) § 115.212(a)(2) § 115.214(a)(1)(B) § 115.214(a)(1)(D) § 115.214(a)(1)(D)(i)	Vapor pressure (at land-based operations). All land-based loading and unloading of VOC with a true vapor pressure less than 0.5 psia is exempt from the requirements of this division, except as specified.	§ 115.214(a)(1)(A) § 115.214(a)(1)(A)(i) § 115.215 § 115.215(4)	§ 115.216 § 115.216(2) § 115.216(3)(B)	None
GRPTVLOAD3	EU	R5211-3	VOC	30 TAC Chapter 115, Loading and Unloading of VOC	§ 115.217(a)(2)(A) § 115.212(a)(2) [G]§ 115.212(a)(7) § 115.214(a)(1)(B)	Any plant, excluding gasoline bulk plants, which loads less than 20,000 gpd of VOC with a true vapor pressure of 0.5 psia or greater is exempt from the	§ 115.214(a)(1)(A) § 115.214(a)(1)(A)(i) § 115.215(4)	§ 115.216 § 115.216(2) § 115.216(3)(B) § 115.216(3)(D)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						requirements of this division, except for the specified requirements.			
HR401	EP	R1111-2	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A) § 111.111(a)(1)(E) § 111.111(a)(1)(G)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six minute period.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
HR402	EP	R1111-3	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A) § 111.111(a)(1)(E) § 111.111(a)(1)(G)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six minute period.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
HTR324	EU	117-3	NO_x	30 TAC Chapter 117, Subchapter B	§ 117.103(a)(1)	Units exempted from the provisions of this division, except as specified in § 117.154(a)(5), include any new unit placed in service after November 15, 1992.	None	None	§ 117.154(a) § 117.154(a)(5)
HTR-324	EP	111-3	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A) § 111.111(a)(1)(E) § 111.111(a)(1)(G)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six minute period.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
MEOHTRK	EU	R5211-4	VOC	30 TAC Chapter 115, Loading and Unloading of VOC	§ 115.212(a)(1) § 115.212(a)(1)(B) § 115.212(a)(3)(A) § 115.212(a)(3)(A)(ii) § 115.212(a)(3)(B) [G]§ 115.212(a)(3)(C) § 115.212(a)(3)(E) § 115.214(a)(1)(B) § 115.214(a)(1)(C)	At operations other than gasoline terminals, gasoline bulk plants, and marine terminals, vapors of VOC with a true vapor pressure of 0.5 psia or greater, must be controlled by one of the following methods.	§ 115.212(a)(3)(B) § 115.214(a)(1)(A) § 115.214(a)(1)(A)(i) § 115.214(a)(1)(A)(ii) § 115.214(a)(1)(A)(iii) § 115.215 § 115.215(1) § 115.215(10) [G]§ 115.215(2)	§ 115.216 § 115.216(2) § 115.216(3)(A) § 115.216(3)(A)(i) § 115.216(3)(A)(ii) § 115.216(3)(A)(iii) § 115.216(3)(B)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 115.215(4) § 115.215(9)		
MEOHTRK	EU	63G-LD1	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.126(a) § 63.126(a)(1) § 63.126(a)(2) § 63.126(a)(3) § 63.126(b) § 63.126(b)(3) [G]§ 63.126(e) § 63.126(f) § 63.126(g) § 63.126(h) [G]§ 63.148(d) § 63.148(e)	For Group 1 transfer racks shall operate a vapor collection system and control device for organic HAPs.	§ 63.128(c) § 63.128(c)(4) § 63.128(e) § 63.128(e)(1) § 63.128(e)(3) [G]§ 63.128(f) § 63.148(b) § 63.148(b)(1) [G]§ 63.148(h)	§ 63.130(e) § 63.130(f) § 63.130(f)(1) § 63.130(f)(2) § 63.130(f)(3) § 63.130(f)(3)(ii)	§ 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(4)(ii)
MET/PRC246	PRO	63F-2	112(B) HAPS	40 CFR Part 63, Subpart F	§ 63.104(a) [G]§ 63.104(d) [G]§ 63.104(e)	Unless one or more of the conditions in §63.104(a)(1)-(6) are met, sources subject to MACT F shall comply with §63.104(b) or (c). If a leak is detected, comply with §63.104(d) of this section.	§ 63.104(b) § 63.104(b)(1) § 63.104(b)(2)(i) § 63.104(b)(3) § 63.104(b)(4) § 63.104(b)(4)(i) § 63.104(b)(4)(iii) § 63.104(b)(5) § 63.104(b)(6)	[G]§ 63.104(e)(2) [G]§ 63.104(f)(1)	[G]§ 63.104(f)(2)
MET/PRC247	EU	115FUG-2	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1) § 115.352(1)(A) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(2) § 115.357(6) § 115.357(8) § 115.357(9)	No pressure relief valves (gaseous service), contacting a process fluid with a TVP greater than 0.044 psia, shall be allowed to have a VOC leak, longer than 15 days after discovery, exceeding the specified VOC concentration.	§ 115.354(1) § 115.354(1)(B) § 115.354(1)(C) § 115.354(10) § 115.354(2) § 115.354(2)(D) § 115.354(4) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) [G]§ 115.356(1) [G]§ 115.356(2) [G]§ 115.356(3) § 115.356(5)	None
MET/PRC247	EU	115FUG	VOC	30 TAC Chapter	§ 115.352(1)	No open-ended valves or	§ 115.354(1)	§ 115.352(7)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
		-2		115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(1) § 115.357(6) § 115.357(8)	lines, rated less than or equal to 10,000 psig and contacting a process fluid with a TVP less than or equal to 0.044 psia, shall be allowed to have a VOC leak, for more than 15 days after discovery, exceeding the specified VOC concentration.	§ 115.354(1)(B) § 115.354(1)(C) § 115.354(2) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	[G]§ 115.356(1) [G]§ 115.356(2) [G]§ 115.356(3) § 115.356(5)	
MET/PRC247	EU	115FUG -2	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1) § 115.352(1)(A) § 115.352(12) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(7) § 115.352(9) § 115.357(6) § 115.357(8)	No open-ended valves or lines, rated less than or equal to 10,000 psig and contacting a process fluid with a TVP greater than 0.044 psia, shall be allowed to have a VOC leak, for more than 15 days after discovery, exceeding the specified VOC concentration.	§ 115.354(1) § 115.354(1)(B) § 115.354(1)(C) § 115.354(10) § 115.354(2) § 115.354(2)(C) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) [G]§ 115.356(1) [G]§ 115.356(2) [G]§ 115.356(3) § 115.356(5)	None
MET/PRC247	EU	115FUG -2	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1) § 115.352(1)(A) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7) § 115.357(1) § 115.357(2) § 115.357(6) § 115.357(8)	No valves, rated less than or equal to 10,000 psig and contacting a process fluid with a TVP less than or equal to 0.044 psia, shall be allowed to have a VOC leak, for more than 15 days after discovery, exceeding the specified VOC concentration.	§ 115.354(1) § 115.354(1)(B) § 115.354(1)(C) § 115.354(2) § 115.354(2)(C) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.354(10) [G]§ 115.356(1) [G]§ 115.356(2) [G]§ 115.356(3) § 115.356(5)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.357(9)				
MET/PRC247	EU	115FUG -2	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1) § 115.352(1)(A) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7) § 115.352(9) § 115.357(12) § 115.357(2) § 115.357(6) § 115.357(8))	No valves, rated less than or equal to 10,000 psig and contacting a process fluid with a TVP greater than 0.044 psia, shall be allowed to have a VOC leak, for more than 15 days after discovery, exceeding the specified VOC concentration.	§ 115.354(1) § 115.354(1)(B) § 115.354(1)(C) § 115.354(10) § 115.354(2) § 115.354(2)(C) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) [G]§ 115.356(1) [G]§ 115.356(2) [G]§ 115.356(3) § 115.356(5)	None
MET/PRC247	EU	115FUG -2	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1) § 115.352(1)(A) § 115.352(2) § 115.352(2)(A) § 115.352(3) § 115.352(5) § 115.352(7) § 115.352(8) § 115.357(12) § 115.357(6) § 115.357(8)	No flanges, contacting a process fluid with a TVP >0.044 psia, shall be allowed to have a VOC leak, for more than 15 days after discovery, exceeding the specified VOC concentration.	§ 115.354(1) § 115.354(1)(B) § 115.354(1)(C) § 115.354(10) § 115.354(11) § 115.354(3) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) § 115.356(5)	None
MET/PRC247	EU	115FUG -2	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1) § 115.352(1)(B) § 115.352(2) § 115.352(2)(A) [G]§ 115.352(2)(C) § 115.352(3) § 115.352(5) § 115.352(7)	No compressor seals, contacting a process fluid with a TVP >0.044 psia, not in hydrogen service or not equipped with a shaft seal, shall be allowed to have a VOC leak, for more than 15 days after discovery, exceeding the specified	§ 115.354(1) § 115.354(1)(B) § 115.354(1)(C) § 115.354(10) § 115.354(2) § 115.354(2)(A) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) § 115.356(5)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						VOC concentration.			
MET/PRC247	EU	115FUG -2	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1) § 115.352(1)(B) § 115.352(2) § 115.352(2)(A) [G]§ 115.352(2)(C) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(6)	No pump seals, contacting a process fluid with a TVP >0.044 psia and not equipped with a shaft seal system, shall be allowed to have a VOC leak, for more than 15 days after discovery, exceeding the specified VOC concentration.	§ 115.354(1) § 115.354(1)(B) § 115.354(1)(C) § 115.354(10) § 115.354(2) § 115.354(2)(B) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) § 115.356(5)	None
MET/PRC247	EU	115FUG -2	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(10)	Instrumentation systems, as defined in 40 CFR §63.161 (January 17, 1997), that meet 40 CFR §63.169 (June 20, 1996) are exempt from the requirements of this division except §115.356(3)(C) of this title.	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
MET/PRC247	EU	115FUG -2	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(11)	Sampling connection systems, as defined in 40 CFR §63.161 (January 17, 1997), that meet the requirements of 40 CFR §63.166(a) and (b) (June 20, 1996) are exempt from the requirements of this division except §115.356(3)(C) of this title.	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
MET/PRC247	EU	115FUG -2	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(13)	Components/systems that contact a process fluid containing VOC	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						having a true vapor pressure equal to or less than 0.002 psia at 68 degrees Fahrenheit are exempt from the requirements of this division except §115.356(3)(C) of this title.			
MET/PRC247	EU	63H-FUG2	112(B) HAPS	40 CFR Part 63, Subpart H	§ 63.162(e) § 63.162(a) § 63.162(c) [G]§ 63.162(g) § 63.162(h)	Equipment that is in organic HAP service less than 300 hours per year is excluded from the requirements of §§63.163 - 63.174 and §63.178 if it is identified as required in §63.181(j).	[G]§ 63.180(d)	§ 63.181(a) § 63.181(j)	§ 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) § 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i)
MET/PRC247	EU	63H-FUG2	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.164 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Compressors. §63.164(a)-(i)	§ 63.164(d) [G]§ 63.164(e) § 63.164(f) § 63.164(h) [G]§ 63.180(b) [G]§ 63.180(c) [G]§ 63.180(d)	§ 63.181(a) § 63.181(b) § 63.181(b)(1)(i) § 63.181(b)(1)(iii) § 63.181(b)(2)(i) [G]§ 63.181(b)(6) [G]§ 63.181(d) [G]§ 63.181(f)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(v) § 63.182(d)(2)(vi) § 63.182(d)(2)(xiii) § 63.182(d)(2)(xiv) § 63.182(d)(4)
MET/PRC247	EU	63H-	112(B)	40 CFR Part 63,	§ 63.165(a)	Pressure relief device in	§ 63.165(a)	§ 63.181(a)	§ 63.182(a)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
		FUG2	HAPS	Subpart H	§ 63.162(a) § 63.162(c) [G]§ 63.162(g) § 63.162(h) [G]§ 63.165(b) § 63.165(c) [G]§ 63.171	gas / vapor service. §63.165(a)-(d)	[G]§ 63.165(b) § 63.165(c) [G]§ 63.180(b) [G]§ 63.180(c) [G]§ 63.180(d)	§ 63.181(b) § 63.181(b)(1)(i) § 63.181(b)(1)(iii) § 63.181(b)(2)(i) § 63.181(b)(3)(i) [G]§ 63.181(f)	§ 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(xiii) § 63.182(d)(2)(xiv) § 63.182(d)(4)
MET/PRC247	EU	63H-FUG2	112(B) HAPS	40 CFR Part 63, Subpart H	§ 63.166(a) § 63.162(a) § 63.162(c) [G]§ 63.162(g) § 63.162(h) § 63.166(b)(1) § 63.166(b)(2) § 63.166(c) [G]§ 63.171	Sampling connection systems. §63.166(a)-(c)	[G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) § 63.181(b) § 63.181(b)(1) § 63.181(b)(1)(i) § 63.181(b)(1)(iii)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d)(1) § 63.182(d)(4)
MET/PRC247	EU	63H-FUG2	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.169 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Instrumentation systems. §63.169(a)-(d)	[G]§ 63.169 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) § 63.181(b) § 63.181(b)(1) § 63.181(b)(1)(i) § 63.181(b)(1)(iii) § 63.181(b)(4) § 63.181(c) § 63.181(d)(1) § 63.181(d)(2)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
								§ 63.181(d)(3) § 63.181(d)(4) [G]§ 63.181(d)(5) § 63.181(d)(6) § 63.181(d)(9)	[G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(xiii) § 63.182(d)(4)
MET/PRC247	EU	63H-FUG2	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.169 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Pressure relief devices in liquid service. §63.169(a)-(d)	[G]§ 63.169 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) § 63.181(b) § 63.181(b)(1) § 63.181(b)(1)(i) § 63.181(b)(1)(iii) § 63.181(b)(4) § 63.181(c) § 63.181(d)(1) § 63.181(d)(2) § 63.181(d)(3) § 63.181(d)(4) [G]§ 63.181(d)(5) § 63.181(d)(6) § 63.181(d)(9)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(xiii) § 63.182(d)(4)
MET/PRC247	EU	63H-FUG2	112(B) HAPS	40 CFR Part 63, Subpart H	§ 63.170 § 63.162(a) § 63.162(c) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Surge control vessels and bottom receivers.	[G]§ 63.180(d)	§ 63.181(a) § 63.181(b) [G]§ 63.181(b)(1) § 63.181(b)(2)(iii)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(xiii)

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
									§ 63.182(d)(4)
MET/PRC247	EU	63H-FUG2	112(B) HAPS	40 CFR Part 63, Subpart H	§ 63.172(c) § 63.172(e) § 63.172(m)	Enclosed combustion devices shall be designed and operated to reduce the organic HAP or VOC emissions vented to them with requirements as specified in this section.	§ 63.172(e) [G]§ 63.180(d)	§ 63.181(a) § 63.181(g) § 63.181(g)(1)(i) § 63.181(g)(1)(ii) § 63.181(g)(1)(iv) [G]§ 63.181(g)(2)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(xiii) § 63.182(d)(2)(xiv) § 63.182(d)(4)
MET/PRC247	EU	63H-FUG2	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.174(a) § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171 § 63.174(b) § 63.174(b)(1) [G]§ 63.174(b)(3) [G]§ 63.174(c) § 63.174(d) [G]§ 63.174(f) [G]§ 63.174(g) [G]§ 63.174(h) § 63.174(i) § 63.174(i)(2) [G]§ 63.174(j)	Connectors in gas/vapor service and in light liquid service. §63.174(a)-(j)	[G]§ 63.174(a) § 63.174(b) § 63.174(b)(1) [G]§ 63.174(b)(3) [G]§ 63.174(c) [G]§ 63.174(f) [G]§ 63.174(g) [G]§ 63.174(h) § 63.174(i) § 63.174(i)(2) [G]§ 63.174(j) [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) § 63.181(b) [G]§ 63.181(b)(1) § 63.181(b)(8)(ii) § 63.181(d) § 63.181(d)(1) § 63.181(d)(2) § 63.181(d)(3) § 63.181(d)(4) [G]§ 63.181(d)(5) § 63.181(d)(6) [G]§ 63.181(d)(7) § 63.181(d)(9)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(ix) § 63.182(d)(2)(xi) § 63.182(d)(2)(xiii) § 63.182(d)(2)(xvi) § 63.182(d)(4)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
MET/PRC247	EU	63H-FUG2	112(B) HAPS	40 CFR Part 63, Subpart H	§ 63.172(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171 [G]§ 63.172(h) § 63.172(i) § 63.172(j)(2) § 63.172(j)(3) § 63.172(m)	Owners/operators of closed-vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section, except as provided in §63.162(b).	[G]§ 63.172(f)(1) § 63.172(g) [G]§ 63.172(h) § 63.172(j)(2) § 63.172(j)(3) [G]§ 63.172(k) [G]§ 63.172(l) [G]§ 63.180(b) [G]§ 63.180(d)	[G]§ 63.172(k) [G]§ 63.172(l) § 63.181(a) § 63.181(b) § 63.181(b)(1) § 63.181(b)(1)(i) § 63.181(b)(1)(iii) § 63.181(b)(2)(i) § 63.181(c) § 63.181(d) § 63.181(d)(1) § 63.181(d)(2) § 63.181(d)(3) § 63.181(d)(4) [G]§ 63.181(d)(5) § 63.181(d)(6) § 63.181(d)(9) § 63.181(g) § 63.181(g)(1)(i) § 63.181(g)(1)(ii) [G]§ 63.181(g)(2) [G]§ 63.181(g)(3)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(xiii) § 63.182(d)(2)(xiv) § 63.182(d)(4)
MET/PRC247	EU	63H-FUG2	112(B) HAPS	40 CFR Part 63, Subpart H	§ 63.163(a) § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) § 63.163(a)(1) § 63.163(a)(1)(i) § 63.163(a)(1)(i)(C) § 63.163(a)(3) § 63.163(b)(1) § 63.163(b)(2) § 63.163(b)(2)(iii) § 63.163(b)(2)(iii)(C) § 63.163(b)(3) [G]§ 63.163(c) [G]§ 63.163(d)	Standards: Pumps in light liquid service. §63.163(a)-(j)	§ 63.163(b)(1) § 63.163(b)(2) § 63.163(b)(2)(iii) § 63.163(b)(2)(iii)(C) § 63.163(b)(3) § 63.163(j)(2) [G]§ 63.176 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) § 63.181(b) § 63.181(b)(1)(i) § 63.181(b)(1)(iii) [G]§ 63.181(b)(6) [G]§ 63.181(b)(7) § 63.181(c) § 63.181(d)(1) § 63.181(d)(2) § 63.181(d)(3) § 63.181(d)(4) [G]§ 63.181(d)(5) § 63.181(d)(6) § 63.181(d)(9) § 63.181(h) [G]§ 63.181(h)(3) § 63.181(h)(4)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(iii) § 63.182(d)(2)(iv) § 63.182(d)(2)(xiii)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					[G]§ 63.163(e) § 63.163(f) § 63.163(i) [G]§ 63.163(j) [G]§ 63.171 [G]§ 63.176			[G]§ 63.181(h)(5) § 63.181(h)(6) § 63.181(h)(7) § 63.181(h)(8) § 63.181(h)(9)	§ 63.182(d)(2)(xiv) § 63.182(d)(4)
MET/PRC247	EU	63H-FUG2	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.167 § 63.162(a) § 63.162(c) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Open-ended valves or lines. §63.167(a)-(e).	[G]§ 63.180(d)	§ 63.181(a) § 63.181(b) § 63.181(b)(1)(i) § 63.181(b)(1)(iii)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4)
MET/PRC247	EU	63H-FUG2	112(B) HAPS	40 CFR Part 63, Subpart H	§ 63.168 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) § 63.168(a) § 63.168(a)(1) § 63.168(a)(1)(i) § 63.168(a)(1)(i)(C) § 63.168(a)(1)(iii) § 63.168(b) § 63.168(b)(1) § 63.168(b)(2) § 63.168(b)(2)(iii) [G]§ 63.168(d) [G]§ 63.168(e) [G]§ 63.168(f) [G]§ 63.168(g) [G]§ 63.168(h) [G]§ 63.168(i)	Standards: Valves in gas/vapor service and in light liquid service. §63.168(a)-(j).	§ 63.168(a) § 63.168(a)(1) § 63.168(a)(1)(i) § 63.168(a)(1)(i)(C) § 63.168(a)(1)(iii) § 63.168(b) § 63.168(b)(1) § 63.168(b)(2) § 63.168(b)(2)(iii) [G]§ 63.168(d) [G]§ 63.168(e) [G]§ 63.168(f) [G]§ 63.168(g) [G]§ 63.168(h) [G]§ 63.168(i) [G]§ 63.175 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) § 63.181(b) [G]§ 63.181(b)(1) § 63.181(d)(1) § 63.181(d)(2) § 63.181(d)(3) § 63.181(d)(4) [G]§ 63.181(d)(5) § 63.181(d)(6) § 63.181(d)(9) § 63.181(h) [G]§ 63.181(h)(1) [G]§ 63.181(h)(2) § 63.181(h)(4) [G]§ 63.181(h)(5) § 63.181(h)(6) § 63.181(h)(7) § 63.181(h)(9)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(i) § 63.182(d)(2)(ii) § 63.182(d)(2)(xiii) § 63.182(d)(2)(xv) § 63.182(d)(4)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					[G]§ 63.171 [G]§ 63.175				
MET-COM48	EP	111-6	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six-minute period. The emissions from this vent originate from colorless VOCs, non-fuming liquids, or other sources that are not capable of obstructing the transmission of light. These vents are not capable of exceeding the opacity standards of 30 TAC Chapter 111 and therefore no monitoring is required to demonstrate compliance.	None	None	None
MET-PMP274	EU	117-4	NO_X	30 TAC Chapter 117, Subchapter B	§ 117.103(a)(9)	Units exempted from the provisions of this division, except as specified in § 117.154(a)(5), include any new unit placed in service after November 15, 1992.	None	None	§ 117.154(a) § 117.154(a)(5)
MET-PMP274	EU	63ZZZZ-1	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6602 - Table 2c.1 § 63.6590(a)(1) § 63.6595(a) § 63.6595(a)(1) § 63.6605(a) § 63.6605(b) § 63.6625(e)	For each emergency stationary CI RICE and black start stationary CI RICE, located at a major source, you must comply with the requirements as specified in Table 2c.1.a-	§ 63.6602- Table 2c.1 § 63.6625(f)	§ 63.6655(e) § 63.6655(e)(2) § 63.6655(f) § 63.6655(f)(1) § 63.6660(a) § 63.6660(b) § 63.6660(c)	§ 63.6640(b) § 63.6640(e) § 63.6645(a) § 63.6645(a)(1) § 63.6645(a)(5)

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 63.6625(e)(2) § 63.6625(f) § 63.6625(h) § 63.6625(i) § 63.6640(a) § 63.6640(f) § 63.6640(f)(1) § 63.6640(f)(1)(i) § 63.6640(f)(1)(ii) § 63.6640(f)(1)(iii) § 63.6665	c.			
MET-STK44	EP	111-1	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(A)	Visible emissions from any stationary vent shall not exceed an opacity of 30% averaged over a six-minute period. The emissions from this vent originate from colorless VOCs, non-fuming liquids, or other sources that are not capable of obstructing the transmission of light. These vents are not capable of exceeding the opacity standards of 30 TAC Chapter 111 and therefore no monitoring is required to demonstrate compliance.	None	None	None
MET-TFL50	EU	115TK-1	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a) § 115.112(a)(2) § 115.112(a)(2)(A) § 115.112(a)(2)(B) § 115.112(a)(2)(C) § 115.112(a)(2)(E)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table	§ 115.114(a) [G]§ 115.114(a)(1) § 115.117 § 115.117(8) § 115.118(a)(5) § 115.118(a)(7)	§ 115.118(a) § 115.118(a)(3) § 115.118(a)(5) § 115.118(a)(7)	§ 115.114(a)(1)(B) § 115.118(a)(3)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.114(a)(1)(A)	II(a).			
MET-TFL50	EU	63G-TK1	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.119(b) § 63.119(a)(1) [G]§ 63.119(b)(1) § 63.119(b)(2) § 63.119(b)(3)(iii) § 63.119(b)(4) § 63.119(b)(5)(i) § 63.119(b)(5)(ii) § 63.119(b)(5)(iii) § 63.119(b)(5)(iv) § 63.119(b)(5)(v) § 63.119(b)(5)(vi) § 63.119(b)(5)(vii) [G]§ 63.119(b)(5)(viii) § 63.119(b)(6) § 63.120(a)(4) § 63.120(a)(7)	Tanks using a fixed roof and an internal floating roof (defined in §63.111) to comply with §63.119(a)(1) must comply with: §63.119(b)(1)-(6).	§ 63.120(a)(3)(ii) § 63.120(a)(3)(iii)	§ 63.120(a)(4) § 63.123(a) § 63.123(c) § 63.123(g) § 63.152(a)	§ 63.120(a)(5) § 63.120(a)(6) [G]§ 63.122(d) § 63.122(h)(1)(i) § 63.152(a) § 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(4)(ii)
MET-TFX46	EU	115TK-2	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.117 § 115.117(1) § 115.117(8) § 115.118(a)(5) § 115.118(a)(7) ** See Periodic Monitoring Summary	§ 115.118(a) § 115.118(a)(5) § 115.118(a)(7)	None
MET-TFX46	EU	63G-TK5	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.119(a)(3)	Group 2 tanks not using emissions averaging as prescribed by §63.150 shall use record keeping methods in §63.123(a). Not required to comply with §63.119 to §63.123.	None	§ 63.123(a)	§ 63.152(c)(4)(iii)
MVCS FLARE	EU	111FL-4	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						more than five minutes in any two-hour period, except for emission event emissions as provided in §101.222(b).			
MVCS FLARE	CD	63A-4	OPACITY	40 CFR Part 63, Subpart A	§ 63.11(b)(4) § 63.11(b)(1) § 63.11(b)(2) § 63.11(b)(3) § 63.11(b)(5) § 63.11(b)(6)(ii) § 63.11(b)(8)	Flares shall be designed and operated with no visible emissions, except for periods of a total of 5 minutes or less during any 2 consecutive hrs. Test Method 22 in App. A of part 60 of this chapter shall be used.	§ 63.11(b)(4) § 63.11(b)(5)	None	None
MVCSFUG	EU	115FUG -3	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(10)	Instrumentation systems, as defined in 40 CFR §63.161 (January 17, 1997), that meet 40 CFR §63.169 (June 20, 1996) are exempt from the requirements of this division except §115.356(3)(C) of this title.	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
MVCSFUG	EU	115FUG -3	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(11)	Sampling connection systems, as defined in 40 CFR §63.161 (January 17, 1997), that meet the requirements of 40 CFR §63.166(a) and (b) (June 20, 1996) are exempt from the requirements of this division except §115.356(3)(C) of this title.	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
MVCSFUG	EU	115FUG	VOC	30 TAC Chapter	§ 115.352(1)(A)	No pressure relief valves	§ 115.354(1)	§ 115.352(7)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
		-3		115, Pet. Refinery & Petrochemicals	§ 115.352(1) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(5) § 115.352(7) § 115.352(9) § 115.357(8) § 115.357(9)	shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1)(B) § 115.354(1)(C) § 115.354(10) § 115.354(2) § 115.354(2)(D) § 115.354(4) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.354(10) [G]§ 115.356(1) [G]§ 115.356(2) [G]§ 115.356(3) § 115.356(5)	
MVCSFUG	EU	115FUG -3	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7) § 115.357(8) § 115.357(9)	No open-ended valves or lines shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(2) § 115.354(5) § 115.354(6) [G]§ 115.354(7) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	[G]§ 115.354(7)
MVCSFUG	EU	115FUG -3	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7)	No valves shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process	§ 115.354(1) § 115.354(1)(B) § 115.354(1)(C) § 115.354(10) § 115.354(2) § 115.354(2)(C) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) [G]§ 115.356(1) [G]§ 115.356(2) [G]§ 115.356(3) § 115.356(5)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.357(8) § 115.357(9)	fluid based on sight, smell, or sound.			
MVCSFUG	EU	115FUG-3	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(2) § 115.352(2)(A) § 115.352(3) § 115.352(5) § 115.352(7) § 115.352(8) § 115.357(12) § 115.357(6) § 115.357(8)	No flanges or other connectors shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(1)(B) § 115.354(1)(C) § 115.354(10) § 115.354(11) § 115.354(3) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) § 115.356(5)	None
MVCSFUG	EU	63H-FUG3	112(B) HAPS	40 CFR Part 63, Subpart H	§ 63.165(a) § 63.162(a) § 63.162(c) [G]§ 63.162(g) § 63.162(h) [G]§ 63.165(b) § 63.165(c) [G]§ 63.171	Standards: Pressure relief device in gas/vapor service. §63.165(a)-(d)	§ 63.165(a) [G]§ 63.165(b) § 63.165(c) [G]§ 63.180(b) [G]§ 63.180(c) [G]§ 63.180(d)	§ 63.181(a) § 63.181(b) § 63.181(b)(1)(i) § 63.181(b)(1)(iii) § 63.181(b)(2)(i) § 63.181(b)(3)(i) [G]§ 63.181(f)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(xiii) § 63.182(d)(2)(xiv) § 63.182(d)(4)
MVCSFUG	EU	63H-FUG3	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.166 § 63.162(a) § 63.162(c) [G]§ 63.162(g)	Standards: Sampling connection systems. §63.166(a)-(c)	[G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) § 63.181(b) § 63.181(b)(1) § 63.181(b)(1)(i)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 63.162(h) § 63.166(b)(1) § 63.166(b)(2) § 63.166(c) [G]§ 63.171			§ 63.181(b)(1)(iii)	§ 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d)(1) § 63.182(d)(4)
MVCSFUG	EU	63H-FUG3	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.169 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Instrumentation systems. §63.169(a)-(d)	[G]§ 63.169 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) § 63.181(b) § 63.181(b)(1) § 63.181(b)(1)(i) § 63.181(b)(1)(iii) § 63.181(b)(4) § 63.181(c) § 63.181(d)(1) § 63.181(d)(2) § 63.181(d)(3) § 63.181(d)(4) [G]§ 63.181(d)(5) § 63.181(d)(6) § 63.181(d)(9)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(xiii) § 63.182(d)(4)
MVCSFUG	EU	63H-FUG3	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.174(a) § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171 § 63.174(b) § 63.174(b)(1) [G]§ 63.174(b)(3) [G]§ 63.174(c) § 63.174(d) [G]§ 63.174(f) [G]§ 63.174(g) [G]§ 63.174(h) § 63.174(i) § 63.174(i)(2)	Standards: Connectors in gas/vapor service and in light liquid service. §63.174(a)-(j)	[G]§ 63.174(a) § 63.174(b) § 63.174(b)(1) [G]§ 63.174(b)(3) [G]§ 63.174(c) [G]§ 63.174(f) [G]§ 63.174(g) [G]§ 63.174(h) § 63.174(i) § 63.174(i)(2) [G]§ 63.174(j) [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) § 63.181(b) [G]§ 63.181(b)(1) § 63.181(b)(8)(ii) § 63.181(d) § 63.181(d)(1) § 63.181(d)(2) § 63.181(d)(3) § 63.181(d)(4) [G]§ 63.181(d)(5) § 63.181(d)(6) [G]§ 63.181(d)(7) § 63.181(d)(9)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(ix) § 63.182(d)(2)(xi) § 63.182(d)(2)(xiii)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					[G]§ 63.174(j)				§ 63.182(d)(2)(xvi) § 63.182(d)(4)
MVCSFUG	EU	63H-FUG3	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.167 § 63.162(a) § 63.162(c) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Open-ended valves or lines. §63.167(a)-(e).	[G]§ 63.180(d)	§ 63.181(a) § 63.181(b) § 63.181(b)(1) § 63.181(b)(1)(i) § 63.181(b)(1)(iii)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4)
MVCSFUG	EU	63H-FUG3	112(B) HAPS	40 CFR Part 63, Subpart H	§ 63.168(a) § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) § 63.168(a)(1) § 63.168(a)(1)(i) § 63.168(a)(1)(i)(C) § 63.168(a)(1)(iii) § 63.168(b) § 63.168(b)(1) § 63.168(b)(2) § 63.168(b)(2)(iii) [G]§ 63.168(d) [G]§ 63.168(e) [G]§ 63.168(f) [G]§ 63.168(g) [G]§ 63.168(h) [G]§ 63.168(i) [G]§ 63.171 [G]§ 63.175	Standards: Valves in gas/vapor service and in light liquid service. §63.168(a)-(j)	§ 63.168(a) § 63.168(a)(1) § 63.168(a)(1)(i) § 63.168(a)(1)(i)(C) § 63.168(a)(1)(iii) § 63.168(b) § 63.168(b)(1) § 63.168(b)(2) § 63.168(b)(2)(iii) [G]§ 63.168(d) [G]§ 63.168(e) [G]§ 63.168(f) [G]§ 63.168(g) [G]§ 63.168(h) [G]§ 63.168(i) [G]§ 63.175 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) § 63.181(b) [G]§ 63.181(b)(1) § 63.181(d)(1) § 63.181(d)(2) § 63.181(d)(3) § 63.181(d)(4) [G]§ 63.181(d)(5) § 63.181(d)(6) § 63.181(d)(9) § 63.181(h) [G]§ 63.181(h)(1) [G]§ 63.181(h)(2) § 63.181(h)(4) [G]§ 63.181(h)(5) § 63.181(h)(6) § 63.181(h)(7) § 63.181(h)(9)	§ 63.182(a) § 63.182(a)(1) § 63.182(a)(2) § 63.182(a)(3) § 63.182(b) [G]§ 63.182(b)(1) § 63.182(b)(2) § 63.182(b)(2)(i) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) § 63.182(d) § 63.182(d)(1) § 63.182(d)(2) § 63.182(d)(2)(i) § 63.182(d)(2)(ii) § 63.182(d)(2)(xiii) § 63.182(d)(2)(xv) § 63.182(d)(4)
OWS325	EU	115WS-1	VOC	30 TAC Chapter 115, Water	§ 115.135(a) § 115.136(a)(1)	Any single or multiple compartment VOC water	§ 115.135(a)(5) § 115.136(a)(1)	§ 115.136(a)(1) § 115.136(a)(3)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
				Separation	§ 115.136(a)(3) § 115.136(a)(4) § 115.137(a)(2)	separator which separates materials having a true vapor pressure of VOC < .5 psia obtained from any equipment is exempt from §115.132(a).	§ 115.136(a)(3) § 115.136(a)(4)	§ 115.136(a)(4)	
PRO-MEOH	PRO	63F-1	112(B) HAPS	40 CFR Part 63, Subpart F	§ 63.100(b) [G]§ 63.102(a) [G]§ 63.102(c) § 63.105(d)	Except as provided in paragraphs (b)(4) and (c) of this section, the provisions of subparts F, G, and H apply to chemical manufacturing process units that meet the criteria.	§ 63.103(b)(1) § 63.103(b)(3) § 63.103(b)(4) [G]§ 63.103(b)(5) § 63.103(b)(6)	[G]§ 63.103(c) [G]§ 63.105(b) § 63.105(c) § 63.105(e)	§ 63.103(b)(2) [G]§ 63.103(b)(5) [G]§ 63.103(d)
STK-41	EP	111-2	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(C) § 111.111(a)(1)(E) § 111.111(a)(1)(G)	Visible emissions from any stationary vent shall not exceed an opacity of 15% averaged over a six minute period for any source with a total flow rate of at least 100,000 acfm unless a CEMS is installed.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
TFX-33	EU	115TK-3	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a) § 115.112(a)(3)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.115(a) § 115.115(a)(6) § 115.116(a) § 115.116(a)(1) [G]§ 115.117 § 115.118(a)(5) § 115.118(a)(7)	§ 115.118(a) § 115.118(a)(4) § 115.118(a)(4)(F) § 115.118(a)(5) § 115.118(a)(7)	None
TFX-33	EU	63G-TK2	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.119(e) § 63.119(a)(1) § 63.119(e)(1) § 63.119(e)(3)	The owner or operator who elects to use a closed vent system and control device (defined	§ 63.120(d)(1) § 63.120(d)(5) § 63.120(d)(6)	§ 63.120(d)(1)(i) § 63.120(d)(1)(i)(A) § 63.123(a) § 63.123(f)(1)	§ 63.120(d)(1) § 63.120(d)(2) § 63.120(d)(2)(i) § 63.120(d)(2)(ii)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 63.119(e)(4) § 63.119(e)(5) § 63.148(d) § 63.148(d)(1) § 63.148(d)(2)	in § 63.111) to comply with§63.119(a)(1) or (a)(2) shall comply with §63.119(e)(1)-(5).		[G]§ 63.123(f)(2)	§ 63.120(d)(3) § 63.120(d)(3)(i) § 63.120(d)(4) § 63.122(b) § 63.122(c)(1) [G]§ 63.122(g)(1) [G]§ 63.122(g)(2) § 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(2)(i) [G]§ 63.152(c)(2)(ii) § 63.152(c)(2)(iii) § 63.152(c)(3) § 63.152(c)(3)(i) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
TFX-34	EU	115TK-4	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)(1) § 115.112(a)(3)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.115(a) § 115.115(a)(6) § 115.116(a) § 115.116(a)(1) [G]§ 115.117 § 115.118(a)(5) § 115.118(a)(7)	§ 115.118(a) § 115.118(a)(4) § 115.118(a)(4)(F) § 115.118(a)(5) § 115.118(a)(7)	None
TFX-34	EU	63G-TK3	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.119(e) § 63.119(a)(1) § 63.119(e)(1) § 63.119(e)(3) § 63.119(e)(4) § 63.119(e)(5) § 63.148(d) § 63.148(d)(1) § 63.148(d)(2)	The owner or operator who elects to use a closed vent system and control device (defined in § 63.111) to comply with§63.119(a)(1) or (a)(2) shall comply with §63.119(e)(1)-(5).	§ 63.120(d)(1) § 63.120(d)(5) § 63.120(d)(6)	§ 63.120(d)(1)(i) § 63.120(d)(1)(i)(A) § 63.123(a) § 63.123(f)(1) [G]§ 63.123(f)(2)	§ 63.120(d)(1) § 63.120(d)(2) § 63.120(d)(2)(i) § 63.120(d)(2)(ii) § 63.120(d)(3) § 63.120(d)(3)(i) § 63.120(d)(4) § 63.122(b) § 63.122(c)(1) [G]§ 63.122(g)(1) [G]§ 63.122(g)(2) § 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(2)(i)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
									[G]§ 63.152(c)(2)(ii) § 63.152(c)(2)(iii) § 63.152(c)(3) § 63.152(c)(3)(i) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
TKFLARE	EU	111FL-3	OPACITY	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period, except for emission event emissions as provided in §101.222(b).	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None
TVT3	EU	115TK-6	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1) § 115.111(a)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.	None	§ 115.118(a) § 115.118(a)(1)	None

Additional Monitoring Requirements

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: GRPMETPR	
Control Device ID No.: RFM41N	Control Device Type: Steam Generating Unit (Boiler)/Process Heater (Design heat input is greater than or equal to 44MW)
Control Device ID No.: RFM41S	Control Device Type: Steam Generating Unit (Boiler)/Process Heater (Design heat input is greater than or equal to 44MW)
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Vent Gas Controls	SOP Index No.: R5121-1
Pollutant: VOC	Main Standard: § 115.121(a)(1)
Monitoring Information	
Indicator: Period of Operation	
Minimum Frequency: n/a	
Averaging Period: n/a	
Deviation Limit: All periods that are not recorded	
Periodic Monitoring Text: Monitor and record the periods of operation of the reformer(s). All periods that are not recorded shall be considered and reported as a deviation. The records must be readily available for inspection.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: HR401	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111-2
Pollutant: OPACITY	Main Standard: § 111.111(a)(1)(A)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: once per calendar quarter	
Averaging Period: n/a	
Deviation Limit: It is a deviation if visible emissions are observed, or if Test Method 9 is performed and opacity is greater than 30%.	
Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: HR402	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111-3
Pollutant: OPACITY	Main Standard: § 111.111(a)(1)(A)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: once per calendar quarter	
Averaging Period: n/a	
Deviation Limit: It is a deviation if visible emissions are observed, or if Test Method 9 is performed and opacity is greater than 30%.	
Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: HTR-324	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: 111-3
Pollutant: OPACITY	Main Standard: § 111.111(a)(1)(A)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: once per calendar quarter	
Averaging Period: n/a	
Deviation Limit: It is a deviation if visible emissions are observed, or if Test Method 9 is performed and opacity is greater than 30%.	
Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: MET-TFX46	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Storage of VOCs	SOP Index No.: 115TK-2
Pollutant: VOC	Main Standard: § 115.112(a)(1)
Monitoring Information	
Indicator: Liquid level	
Minimum Frequency: Once per day	
Averaging Period: n/a	
Deviation Limit: It shall be considered and reported as a deviation anytime the liquid level falls below the fill pipe level.	
Periodic Monitoring Text: Regardless of the location of the fill pipe, the fill pipe must be submerged at all times. Monitor and record the depth of the liquid using an automated/remote sounding device or liquid level sensing alarm/monitor. It shall be considered and reported as a deviation any time the liquid level falls below the fill pipe level.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: MET-TFX46	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Storage of VOCs	SOP Index No.: 115TK-2
Pollutant: VOC	Main Standard: § 115.112(a)(1)
Monitoring Information	
Indicator: Structural Integrity of the pipe	
Minimum Frequency: Emptied and degassed	
Averaging Period: n/a	
Deviation Limit: It shall be considered and reported as a deviation if the repairs are not completed prior to refilling the storage vessel.	
Periodic Monitoring Text: Inspect to determine the structural integrity of the fill pipe and record each time the storage vessel is emptied and degassed. If the structural integrity of the fill pipe is in question, repairs shall be made before the storage vessel is refilled. It shall be considered and reported as a deviation if the repairs are not completed prior to refilling the storage vessel.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: STK-41	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: 111-2
Pollutant: OPACITY	Main Standard: § 111.111(a)(1)(C)
Monitoring Information	
Indicator: Fuel Type	
Minimum Frequency: Annually or at any time an alternate fuel is used	
Averaging Period: n/a	
Deviation Limit: It is a deviation if an alternate fuel is fired alone or in combination with natural gas for a period > 24 consecutive hours; or visible emissions are present during the firing of alternate fuel for a period > 7 consecutive days; or opacity > 15% .	
Periodic Monitoring Text: Record the type of fuel used by the unit. If an alternate fuel is fired, either alone or in combination with the specified gas, for a period greater than or equal to 24 consecutive hours it shall be considered and reported as a deviation or the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are observed. Any time an alternate fuel is fired for a period of greater than 7 consecutive days then visible emissions observations will be conducted no less than once per week. Documentation of all observations shall be maintained. If visible emissions are present during the firing of an alternate fuel, the permit holder shall either list this occurrence as a deviation or the permit holder may determine the opacity consistent with Test Method 9. Any opacity readings that are above the opacity limit from the underlying applicable requirement shall be reported as a deviation.	

Permit Shield

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
149ST-1	N/A	30 TAC Chapter 115, Vent Gas Controls	Compressor lube system, compressor regulated by 115.352.
149ST-2	N/A	30 TAC Chapter 115, Vent Gas Controls	Compressor lube system, compressor regulated by 115.352.
149ST-3	N/A	30 TAC Chapter 115, Vent Gas Controls	Compressor lube system, compressor regulated by 115.352.
328	N/A	30 TAC Chapter 115, Vent Gas Controls	Storage tank, regulated by 115.112(a).
AFUG322	N/A	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	Fugitive does not contain VOC.
AFUG322	N/A	40 CFR Part 63, Subpart H	Components not in HAP service.
AMMFLARE	N/A	40 CFR Part 60, Subpart A	Flare is not used to comply with any subpart under 40 CFR 60 or 61.
AMMFLARE	N/A	40 CFR Part 63, Subpart A	Flare is not used to comply with any subpart under 40 CFR 63.
ASTORFUG	N/A	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	The stream does not contain any VOC.
ATK2	N/A	30 TAC Chapter 115, Storage of VOCs	The tank does not store a VOC. It stores ammonia.
ATK2FLR	N/A	40 CFR Part 60, Subpart A	The flare is not used to comply with any subparts of 40 CFR parts 60 or 61.

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
ATK2FLR	N/A	40 CFR Part 63, Subpart A	The flare is not used to comply with any subparts under 40 CFR Part 63.
AWARMFUG	N/A	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	The stream does not contain any VOC.
CRTK	N/A	40 CFR Part 60, Subpart K	Does not store petroleum liquids.
CRTK	N/A	40 CFR Part 60, Subpart Ka	Does not store petroleum liquids.
CRTK	N/A	40 CFR Part 60, Subpart Kb	Does not store volatile organic liquids.
CTW323	N/A	40 CFR Part 63, Subpart Q	The cooling tower is not operated with chromium-based water treatment chemicals.
DOCK	N/A	30 TAC Chapter 115, Loading and Unloading of VOC	Marine loading/unloading outside Houston/Galveston area is exempt.
FLARE	N/A	40 CFR Part 60, Subpart A	Flare is not used to comply with any subpart under 40 CFR 60 or 61.
FLARE	N/A	40 CFR Part 63, Subpart A	Flare is not used to comply with any subpart under 40 CFR 63.
HR401	N/A	30 TAC Chapter 112, Sulfur Compounds	The heater does not burn liquid fuel.
HR401	N/A	30 TAC Chapter 117, Subchapter B	The heater maximum rated capacity is less than 40 MMBtu/hr.
HR402	N/A	30 TAC Chapter 112, Sulfur Compounds	The heater does not burn liquid fuel.

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
HR402	N/A	30 TAC Chapter 117, Subchapter B	The heater maximum rated capacity is less than 40 MMBtu/hr.
HRUCLT	N/A	40 CFR Part 63, Subpart Q	The cooling tower is not operated with chromium-based water treatment chemicals.
HTR324-STK	N/A	30 TAC Chapter 115, Vent Gas Controls	All of the VOCs in the vent gas stream originate from sources for which another division within Chapter 115 has established control requirements.
MET/PRC246	N/A	40 CFR Part 63, Subpart Q	The cooling tower is not operated with chromium-based water treatment chemicals.
MET/PRC247	N/A	40 CFR Part 60, Subpart VV	Fugitive units to which 40 CFR Part 63, Subpart H applies that are also subject to 40 CFR Part 60, Subpart VV are required to comply only with 40 CFR Part 63, Subpart H.
MET/PRC247	N/A	40 CFR Part 61, Subpart V	Fugitive components are not in volatile hazardous air pollutant (VHAP) service.
MET-STK44	N/A	30 TAC Chapter 115, Vent Gas Controls	Does not contain VOC's.
MET-TFL50	N/A	40 CFR Part 60, Subpart K	Does not store petroleum liquids.
MET-TFL50	N/A	40 CFR Part 60, Subpart Ka	Does not store petroleum liquids.

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
MET-TFL50	N/A	40 CFR Part 60, Subpart Kb	Constructed prior to 7/23/84.
MET-TFX46	N/A	40 CFR Part 60, Subpart K	Does not store petroleum liquids.
MET-TFX46	N/A	40 CFR Part 60, Subpart Ka	Does not store petroleum liquids.
MET-TFX46	N/A	40 CFR Part 60, Subpart Kb	Constructed prior to 7/23/84.
MVCSFUG	N/A	40 CFR Part 60, Subpart VV	Fugitive units to which 40 CFR Part 63, Subpart H applies that are also subject to 40 CFR Part 60, Subpart VV are required to comply only with 40 CFR Part 63, Subpart H.
MVCSFUG	N/A	40 CFR Part 61, Subpart V	Fugitive components are not in volatile hazardous air pollutant (VHAP) service.
OWS325	N/A	40 CFR Part 63, Subpart G	Contains no Group 1 wastewater streams
PRFMHTR	N/A	30 TAC Chapter 117, Subchapter B	This is an exempt unit permitted and placed into service after 11/15/1992.
RFM41N	N/A	30 TAC Chapter 117, Subchapter B	This is an exempt unit permitted and placed into service after 11/15/1992.
RFM41S	N/A	30 TAC Chapter 117, Subchapter B	This is an exempt unit permitted and placed into service after 11/15/1992.
SCRDUCT	N/A	30 TAC Chapter 117, Subchapter B	This is an exempt unit permitted and placed into service after 11/15/1992.

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
SYNGAS COMP	N/A	40 CFR Part 63, Subpart H	Components not in HAP service.
TFX-33	N/A	40 CFR Part 60, Subpart K	Does not store petroleum liquids.
TFX-33	N/A	40 CFR Part 60, Subpart Ka	Does not store petroleum liquids.
TFX-33	N/A	40 CFR Part 60, Subpart Kb	Constructed prior to 7/23/84.
TFX-34	N/A	40 CFR Part 60, Subpart K	Does not store petroleum liquids.
TFX-34	N/A	40 CFR Part 60, Subpart Ka	Does not store petroleum liquids.
TFX-34	N/A	40 CFR Part 60, Subpart Kb	Constructed prior to 7/23/84.
TK320	N/A	30 TAC Chapter 115, Storage of VOCs	Tank does not store VOCs
TK320	N/A	40 CFR Part 60, Subpart K	Does not store petroleum liquids.
TK320	N/A	40 CFR Part 60, Subpart Ka	Does not store petroleum liquids.
TK320	N/A	40 CFR Part 60, Subpart Kb	Does not volatile organic liquids.
TK320	N/A	40 CFR Part 63, Subpart F	Tank does not store HAPs.
TKFLARE	N/A	40 CFR Part 60, Subpart A	Flare is not used to comply with any subpart under 40 CFR 60 or 61.
TKFLARE	N/A	40 CFR Part 63, Subpart A	Flare is not used to comply with any subpart under 40 CFR 63.
TVD1	N/A	40 CFR Part 60, Subpart NNN	Constructed before December 30, 1983.
TVD2	N/A	40 CFR Part 60, Subpart NNN	Constructed before December 30, 1983.

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
TVD3	N/A	40 CFR Part 60, Subpart NNN	Constructed before December 30, 1983.
TVD4	N/A	40 CFR Part 60, Subpart NNN	Constructed before December 30, 1983.
TVMEOHR1	N/A	40 CFR Part 60, Subpart RRR	Constructed prior to June 29, 1990.
TVMEOHR2	N/A	40 CFR Part 60, Subpart RRR	Constructed prior to June 29, 1990.
TVNH3COMP	N/A	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	Not in VOC service.
TVNH3COMP	N/A	40 CFR Part 63, Subpart H	Components not in HAP service.
TVSEW	N/A	30 TAC Chapter 115, Industrial Wastewater	No affected VOC wastewater streams.
TVSEW	N/A	40 CFR Part 63, Subpart F	Not in HAP service.
TVT1	N/A	30 TAC Chapter 115, Storage of VOCs	Capacity less than 1,000 gallons.
TVT1	N/A	40 CFR Part 60, Subpart K	Capacity less than 40,000 gallons.
TVT1	N/A	40 CFR Part 60, Subpart Ka	Capacity less than 40,000 gallons.
TVT1	N/A	40 CFR Part 60, Subpart Kb	Capacity less than 75 cubic meters.
TVT1	N/A	40 CFR Part 63, Subpart F	Not in HAP service.
TVT2	N/A	30 TAC Chapter 115, Storage of VOCs	Capacity less than 1,000 gallons.
TVT2	N/A	40 CFR Part 60, Subpart K	Capacity less than 40,000 gallons.
TVT2	N/A	40 CFR Part 60, Subpart Ka	Capacity less than 40,000 gallons.

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
TVT2	N/A	40 CFR Part 60, Subpart Kb	Capacity less than 75 cubic meters.
TVT2	N/A	40 CFR Part 63, Subpart F	Not in HAP service.
TVT3	N/A	40 CFR Part 60, Subpart K	Capacity less than 40,000 gallons.
TVT3	N/A	40 CFR Part 60, Subpart Ka	Capacity less than 40,000 gallons.
TVT3	N/A	40 CFR Part 60, Subpart Kb	Capacity less than 75 cubic meters.
TVT3	N/A	40 CFR Part 63, Subpart F	Not in HAP service.

New Source Review Authorization References

New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Prevention of Significant Deterioration (PSD) Permits	
PSD Permit No.: PSDTX1334	Issuance Date: 03/20/2015
PSD Permit No.: PSDTX1334GHG	Issuance Date: 08/01/2014
Title 30 TAC Chapter 116 Permits, Special Permits, and Other Authorizations (Other Than Permits By Rule, PSD Permits, or NA Permits) for the Application Area.	
Authorization No.: 901	Issuance Date: 03/20/2015
Permits By Rule (30 TAC Chapter 106) for the Application Area	
Number: 106.261	Version No./Date: 11/01/2003
Number: 106.263	Version No./Date: 11/01/2001
Number: 106.371	Version No./Date: 09/04/2000
Number: 106.472	Version No./Date: 09/04/2000
Number: 106.473	Version No./Date: 09/04/2000
Number: 106.492	Version No./Date: 09/04/2000
Number: 106.532	Version No./Date: 09/04/2000
Number: 51	Version No./Date: 06/07/1996
Number: 61	Version No./Date: 06/07/1996

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
149ST-1	SOUR OIL VENT STACK 1	901, PSDTX1334
149ST-2	SOUR OIL VENT STACK 2	901, PSDTX1334
149ST-3	SOUR OIL VENT STACK 3	901, PSDTX1334
328	CRUDE TANK SCRUBBER	901, PSDTX1334
AFUG322	AMMONIA PLANT FUGITIVE EQUIPMENT	901, PSDTX1334
AMMFLARE	AMMONIA PLANT FLARE	901, PSDTX1334
ASTORFUG	AMMONIA STORAGE AREA #2 FUGITIVES	901, PSDTX1334
ATK2FLR	AMMONIA STORAGE TANK #2 FLARE	901, PSDTX1334
ATK2	NH3 STORAGE TANK #2	901, PSDTX1334
AWARMFUG	WARM PIPELINE FUGITIVES	901, PSDTX1334
CRTK	CRUDE STORAGE TANK	901, PSDTX1334
CTW323	AMMONIA COOLING TOWER	901, PSDTX1334
DOCK	DOCK	901, PSDTX1334
FL-42	REFORMER MSS FLARE	901, PSDTX1334
FLARE	UTILITY FLARE	901, PSDTX1334
GRPMETPR	METHANOL PROCESS PURGE GAS	901, PSDTX1334
HR401	GLYCOL HEATER #1	901, PSDTX1334
HR402	GLYCOL HEATER #2	901, PSDTX1334

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
HRUCLT	HRU COMPRESSOR COOLING TOWER	106.371/09/04/2000
HTR324	AMMONIA PLANT START-UP HEATER	901, PSDTX1334
HTR-324	AMMONIA PLANT START-UP HEATER	901, PSDTX1334
HTR324-STK	AMMONIA PLANT START-UP HEATER STACK	901, PSDTX1334
MEOHTRK	METHANOL TRUCK LOADING	901, PSDTX1334
MET/PRC246	METHANOL COOLING TOWER	901, PSDTX1334
MET/PRC247	METHANOL PLANT FUGITIVE EQUIPMENT	901, PSDTX1334
MET-COM48	DME COMPRESSOR VENT (MAINTENANCE)	901, PSDTX1334
MET-PMP274	STANDBY DIESEL PUMP	901, PSDTX1334
MET-STK44	CO2 STRIPPER VENT	901, PSDTX1334
MET-TFL50	METHANOL RECEIVER TANK	901, PSDTX1334
MET-TFX46	STRIPPER TAILS TANK	901, PSDTX1334
MVCS FLARE	MVCS FLARE	901, PSDTX1334
MVCSFUG	DOCK-FUGITIVE COMPONENTS	901, PSDTX1334
OWS325	OIL/WATER SEPARATOR C.A.S.	901, PSDTX1334
PRFMHTR	PREREFORMER HEATER	901, PSDTX1334
PRO-MEOH	METHANOL PROCESS UNIT	901, PSDTX1334
RFM41N	NORTH REFORMER	901, PSDTX1334

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
RFM41S	SOUTH REFORMER	901, PSDTX1334
SCRDUCT	SCR DUCT BURNER	901, PSDTX1334
STK-41	SCR UNIT STACK	901, PSDTX1334
SYNGAS COMP	SYN GAS COMPRESSOR	901, PSDTX1334
TFX-33	TANK STORAGE--METHANOL WEST	901, PSDTX1334
TFX-34	TANK STORAGE--METHANOL EAST	901, PSDTX1334
TK320	AMMONIA STORAGE TANK	901, PSDTX1334
TKFLARE	AMMONIA STORAGE TANK FLARE	901, PSDTX1334
TVD1	DISTILLATION TOWER 1	901, PSDTX1334
TVD2	DISTILLATION TOWER 2	901, PSDTX1334
TVD3	DISTILLATION TOWER 3	901, PSDTX1334
TVD4	DISTILLATION TOWER 4	901, PSDTX1334
TVLDBFWCI	BFWT UNLOADING	106.472/09/04/2000
TVLDCRTK	CRUDE TANK LOADING/UNLOADING	106.473/09/04/2000
TVLDCWMEAF	CTW TREATING UNLOADING 2	106.472/09/04/2000
TVLDCWMECI	CTW TREATING UNLOADING 4	106.472/09/04/2000
TVLDCWME	CTW TREATING UNLOADING 3	106.472/09/04/2000
TVLDCWMEIN	CTW TREATING UNLOADING 1	106.472/09/04/2000

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
TVLDCWNHCI	CTW TREATING UNLOADING 6	106.472/09/04/2000
TVLDCWNH	CTW TREATING UNLOADING 5	106.472/09/04/2000
TVLDFUELDW	DIESEL TANK-DEMIN. PUMP UNLOADING	106.472/09/04/2000
TVLDOILME	CIRCULATOR LUBE OIL RESERVOIR TANK LOADING/UNLOAD	106.472/09/04/2000
TVLDOILNH	NH3 SYN GAS LUBE OILSEAL OIL RESERVOIR LOAD/UNLOAD	106.472/09/04/2000
TVLDOILRFP	REFRIG. COMPRESSOR LUBE OIL ESERVOIR LOAD/UNLOAD	106.472/09/04/2000
TVLDOILSNC	MEOH OIL RESERVOIR COMPRESSOR OIL LOAD/UNLOADING	106.472/09/04/2000
TVLDOILSNT	MEOH OIL RESERVOIR TURBINE OIL LOADING/UNLOADING	106.472/09/04/2000
TVLDREFREC	REFINED RECEIVER TANK LOADING/UNLOADING	106.473/09/04/2000
TVLDUSDOIL	RECLAIMER HOLD TANK LOADING/UNLOADING	106.472/09/04/2000
TVMEOHR1	METHANOL REACTOR #1	901, PSDTX1334
TVMEOHR2	METHANOL REACTOR #2	901, PSDTX1334
TVNH3COMP	AMMONIA SYN GAS COMPRESSOR	901, PSDTX1334
TVSEW	PLANT WASTEWATER SEWERS	061/06/07/1996, 106.532/09/04/2000
TVT1	AUXILIARY SEAL OIL TANK	106.472/09/04/2000
TVT2	MEOH OIL RESERVOIR TURBINE OIL TANK	106.472/09/04/2000
TVT3	MEOH OIL RESERVOIR COMPRESSOR OIL TANK	106.472/09/04/2000

Appendix A

Acronym List

The following abbreviations or acronyms may be used in this permit:

ACFM ..... actual cubic feet per minute
AMOC ..... alternate means of control
ARP ..... Acid Rain Program
ASTM ..... American Society of Testing and Materials
B/PA ..... Beaumont/Port Arthur (nonattainment area)
CAM ..... Compliance Assurance Monitoring
CD ..... control device
COMS ..... continuous opacity monitoring system
CVS ..... closed-vent system
D/FW ..... Dallas/Fort Worth (nonattainment area)
DR ..... Designated Representative
ElP ..... El Paso (nonattainment area)
EP ..... emission point
EPA ..... U.S. Environmental Protection Agency
EU ..... emission unit
FCAA Amendments ..... Federal Clean Air Act Amendments
FOP ..... federal operating permit
GF ..... grandfathered
GHG ..... Greenhouse gas
gr/100 scf ..... grains per 100 standard cubic feet
HAP ..... hazardous air pollutant
H/G/B ..... Houston/Galveston/Brazoria (nonattainment area)
H_2S ..... hydrogen sulfide
ID No. ..... identification number
lb/hr ..... pound(s) per hour
MMBtu/hr ..... Million British thermal units per hour
MRRT ..... monitoring, recordkeeping, reporting, and testing
NA ..... nonattainment
N/A ..... not applicable
NADB ..... National Allowance Data Base
NO_x ..... nitrogen oxides
NSPS ..... New Source Performance Standard (40 CFR Part 60)
NSR ..... New Source Review
ORIS ..... Office of Regulatory Information Systems
Pb ..... lead
PBR ..... Permit By Rule
PM ..... particulate matter
ppmv ..... parts per million by volume
PSD ..... prevention of significant deterioration
RO ..... Responsible Official
SO_2 ..... sulfur dioxide
TCEQ ..... Texas Commission on Environmental Quality
TSP ..... total suspended particulate
TVP ..... true vapor pressure
U.S.C. ..... United States Code
VOC ..... volatile organic compound

Appendix B

Major NSR Summary Table

Permit Number: 901, PSD-TX-1334			Issuance Date: 3/20/2015				
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**(4)	Spec. Cond.	Spec. Cond.	Spec. Cond.
STK-41	Reforming Furnaces and Pre-Reformer Fired Heater	NO_x	18	79.35	2, 18, 19, 29	2, 18, 19, 29	2, 18, 19
		NO_x (MSS)	152	--	29	29	
		CO	218.56	476.48	2, 18, 19, 29	2, 18, 19, 29	2, 18, 19
		VOC	12.13	52.87	2	2	2
		SO_2	1.26	5.47	2	2	2
		PM	16.76	73.04	2	2	2
		PM_{10}	16.76	73.04	2	2	2
		$PM_{2.5}$	16.76	73.04	2, 18	2, 18	2, 18
		NH_3	19.90	57.77	18, 20, 29	18, 20, 29	18
35	Methanol East and West Shore Tanks	VOC	7.53	7.96	2, 9, 18, 25	2, 3, 9, 18, 25	2, 18
35M	Shore Tank Scrubber MSS	VOC	82.66	8.43	2, 9, 22, 23, 25	2, 9, 21, 22, 23, 25	2
FL42	Reformer Flare	NO_x	0.23	0.54			
		CO	1.48	2.63			
		VOC	4.22	3.70	11	11	
		SO_2	0.01	0.01			
FL42M	Reformer Flare (MSS)	NO_x	653.34	3.61		21	
		CO	4253.54	30.91		21	
		VOC	86.68	0.42	11	11, 21	

Permit Number: 901, PSD-TX-1334			Issuance Date: 3/20/2015				
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**(4)	Spec. Cond.	Spec. Cond.	Spec. Cond.
45	Methanol Plant Flare	NO_x	0.06	0.28	2	2	2
		CO	0.27	1.16			
		VOC	0.01	0.02	2, 11	2, 11	2
		SO_2	0.01	0.01			
45M	Methanol Plant Flare (MSS)	NO_x	258.82	1.72	2	2, 21	2
		CO	2219.15	14.78		21	
		VOC	99.77	0.48	2, 11	2, 11, 21	2
328	Crude Methanol Tank Scrubber	VOC	27.70	35.00	2, 10, 25	2, 10, 25	2
		VOC (MSS)	258.00	--	2, 10	2, 10	2
		CO	8.00	35.04			
MET-CLT246	Methanol Cooling Tower	VOC	0.27	1.20	2	2	2
		PM	11.75	51.47			
		PM_{10}	9.12	39.96			
		$PM_{2.5}$	0.03	0.13			
MET-COM48	DME Compressor Vent (MSS)	VOC	2028.00	1.80		21	
MET-PMP274	Standby Diesel Pump	NO_x	7.75	1.5			
		CO	1.67	0.32			
		VOC	0.63	0.12			
		SO_2	0.51	0.10			
		PM	0.55	0.11			
		PM_{10}	0.55	0.11			
		$PM_{2.5}$	0.55	0.11			
MET-STK44	Carbon Dioxide Stripper Vent	CO	19.10	2.30			
		NH_3	8.30	0.50			

Permit Number: 901, PSD-TX-1334			Issuance Date: 3/20/2015				
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**(4)	Spec. Cond.	Spec. Cond.	Spec. Cond.
MET-TFL50	Refined Methanol Tank	VOC	0.20	0.21	2	2	2
MET-TFL50M	Refined Receiver Maintenance	VOC	32.77	0.04	2, 22, 23, 24	2, 22, 23, 24	2
MET-FUG247	Fugitives-Methanol Area (5)	VOC	1.25	5.46	2, 15	2, 15	2, 15
MEOHTRK	Methanol Truck Loading Fugitives (5)	VOC	1.78	1.08	2, 14	2, 14	2
FL321	Ammonia Plant Flare	NO_x	0.90	3.94			
		CO	1.85	8.09			
		VOC	0.10	0.40			
		SO_2	0.01	0.01			
		NH_3	2.59	11.34	7	7	
FL321M	Ammonia Plant Flare (MSS)	NO_x	91.46	1.46		21	
		CO	1.32	0.40		21	
		NH_3	32.41	0.52	7	7, 21	
		SO_2	0.01	0.01		21	
TKFLARE	Ammonia Storage Tank Flare	NO_x	0.02	0.10			
		CO	0.04	0.20			
		VOC	0.10	0.01	7	7	
		SO_2	0.01	0.01			
TKFLAREM	Ammonia Storage Tank Flare (MSS)	NO_x	16.62	1.10		21	
		NH_3	30.47	1.91	7	7, 21	
		CO	5.06	0.42		21	
		VOC	0.05	0.02		21	
		SO_2	0.01	0.02		21	

Permit Number: 901, PSD-TX-1334			Issuance Date: 3/20/2015				
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**(4)	Spec. Cond.	Spec. Cond.	Spec. Cond.
ATK2FLR	Ammonia Storage Flare	CO	0.39	1.72			
		NH_3	45.07	0.95	7	7	
		NO_x	25.94	1.34			
		SO_2	0.01	0.01			
		VOC	0.01	0.03			
ATK2FLR	Ammonia Storage Flare (MSS)	NH_3	11.11	0.40	7	7, 21	
		NO_x	6.12	0.22			
AFUG322	Fugitives-Ammonia Plant (5)	NH_3	0.47	2.04	16	16	
AFUG322M	Ammonia Plant Equipment Degassing	NH_3	0.01	0.01	16	16, 21	
ASTORFUG	Storage Tank Fugitives (5)	NH_3	0.07	0.32	16	16	
AWARMFUG	Warm Pipeline Fugitives (5)	NH_3	0.02	0.10	16	16	
CTW323	Ammonia Cooling Tower	NH_3	0.84	3.68			
		PM (5)	2.45	10.72			
		PM_{10}(5)	1.90	8.33			
		$PM_{2.5}$ (5)	0.01	0.03			
HTR324	Ammonia Plant Start-Up Heater	NO_x	1.30	0.10	2	2	2

Permit Number: 901, PSD-TX-1334			Issuance Date: 3/20/2015				
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**(4)	Spec. Cond.	Spec. Cond.	Spec. Cond.
		CO	1.10	0.10	2	2	2
		VOC	0.10	0.01	2	2	2
		SO_2	0.01	0.01	2	2	2
		PM	0.10	0.01	2	2	2
		PM_{10}	0.10	0.01	2	2	2
		$PM_{2.5}$	0.10	0.01	2	2	2
HTR401	Glycol Heater No. 1	CO	1.42	6.24	2	2	2
		NO_x	2.08	9.09	2	2	2
		PM	0.13	0.56	2	2	2
		PM_{10}	0.13	0.56	2	2	2
		$PM_{2.5}$	0.13	0.56	2	2	2
		SO_2	0.01	0.04	2	2	2
		VOC	0.09	0.41	2	2	2
HTR402	Glycol Heater No. 2	CO	1.42	6.24	2	2	2
		NO_x	2.08	9.09	2	2	2
		PM	0.13	0.56	2	2	2
		PM_{10}	0.13	0.56	2	2	2
		$PM_{2.5}$	0.13	0.56	2	2	2
		SO_2	0.01	0.04	2	2	2
		VOC	0.09	0.41	2	2	2
OWS325	Oil/Water Separator CAS	VOC	0.01	0.01		12	
326	Marine Vapor Control System Product Flare	NO_x	2.19	2.32			
		CO	18.70	19.63			
		VOC	8.62	2.74	2	2	2
		SO_2	0.02	0.02			

Permit Number: 901, PSD-TX-1334			Issuance Date: 3/20/2015				
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**(4)	Spec. Cond.	Spec. Cond.	Spec. Cond.
327	Fugitives-Product Loading (5)	VOC	0.03	0.14	2, 15	2, 15	2, 15
VACTRK	Vacuum Truck Loading Activities	VOC	1.70	0.01	26	21, 26	
SAMPLE	Sampling Activities	VOC	1.01	0.14	2	2	2
		NH_3	0.09	0.03			
MEOHEQCLR	Methanol Plant Equipment Degassing	VOC	23.24	1.18	2, 22, 23	2, 21, 22, 23	2
		H_2S	0.01	0.01			
TEMPTK	Temporary Tankage	VOC	2.22	0.04	2	2, 21, 27	2
TK9067	Dock Spill Control & Maintenance Tank Activities	VOC	1.18	0.04	2	2, 21	2
CATHD	Catalyst Handling Activities	PM	4.55	0.12		21	
		PM_{10}	1.10	0.03		21	
		$PM_{2.5}$	0.55	0.01		21	
ANAGAS	Analyzer Gas Emissions	VOC	1.65	0.03			
		NO_x	0.01	0.01			
		CO	1.13	0.02			
		NH_3	0.10	0.01			
TK320	Ammonia Tank De-Inventory	NH_3	0.37	0.01		21	
TEMPFLR	Temporary Flare	VOC	0.91	0.01	30	21, 30	
		NO_x	0.03	0.01	30	21, 30	
		CO	0.26	0.01	30	21, 30	
		SO_2			30	21, 30	

Permit Number: 901, PSD-TX-1334			Issuance Date: 3/20/2015				
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**(4)	Spec. Cond.	Spec. Cond.	Spec. Cond.
AMMRV	Ammonia Relief Valves (MSS)	NH_3	0.02	0.01		21	
EQCLR	Equipment Clearing (MSS)	NH_3	0.04	0.01		21	

Footnotes:

TCEQ Air Permit No. 901 Footnotes:

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
NH_3 - ammonia
(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Major NSR Summary Table

Permit Number: PSD-TX-1334-GHG			Issuance Date: 8/1/14				
Emission Point No.	Source Name	Air Contaminant Name	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**(1,2,3)	Spec. Cond.	Spec. Cond.	Spec. Cond.
STK41	Reformer furnaces, Preheater and SCR duct burner	CO_2		1,173,573	IV.A.1, IV.A.2, V, VI	IV.A.1, IV.A.2, V, VI	V, VI
		CH_4		59.34	IV.A.1, IV.A.2, V, VI	IV.A.1, IV.A.2, V, VI	V, VI
		N_2O		11.87	IV.A.1, IV.A.2, V, VI	IV.A.1, IV.A.2, V, VI	V, VI
		CO2e		1,178,593	IV.A.1, IV.A.2, V, VI	IV.A.1, IV.A.2, V, VI	V, VI
FL42	Reformer MSS flare	CO_2		16,721	IV.A.1, IV.A.3, V	IV.A.1, IV.A.3, V	V
		CH_4		265.82	IV.A.1, IV.A.3, V	IV.A.1, IV.A.3, V	V
		N_2O		0.17	IV.A.1, IV.A.3, V	IV.A.1, IV.A.3, V	V
		CO2e		23,417	IV.A.1, IV.A.3, V	IV.A.1, IV.A.3, V	V
MET- FUG247	Methanol plant fugitives	CO_2		15	IV.A.4	IV.A.4, V	
		CH_4		2.6	IV.A.4	IV.A.4, V	
		CO2e		80	IV.A.4	IV.A.4, V	

Footnotes:

1. Compliance with the annual emission limits (tons per year) is based on a 12-month rolling total.
2. The TPY emission limits specified in this table are not to be exceeded for this facility and include emissions from the facility during all operations and include MSS activities. This total is rounded off for estimation purposes to two significant figures.
3. Global Warming Potentials (GWP): C02 =1, CH4 = 25, N20 = 298

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AIR QUALITY PERMIT

A Permit Is Hereby Issued To
OCI Beaumont LLC
Authorizing the Construction and Operation of
Beaumont Plant
Located at **Nederland, Jefferson County, Texas**
Latitude 30° 1′ 3″ Longitude –94° 2′ 2″

Permits: 901 and PSDTX1334

Revision Date : March 20, 2015

Expiration Date: July 22, 2024

For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code 116.116 (30 TAC 116.116)]
2. **Voiding of Permit**. A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1)the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of $5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC 116.120(a), (b) and (c)]
3. **Construction Progress**. Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC 116.115(b)(2)(A)]
4. **Start-up Notification**. The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC 116.115(b)(2)(B)(iii)]
5. **Sampling Requirements**. If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC 116.115(b)(2)(C)]

6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction; comply with any additional recordkeeping requirements specified in special conditions attached to the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC 116.115(b)(2)(E)]
8. **Maximum Allowable Emission Rates**. The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources--Maximum Allowable Emission Rates." [30 TAC 116.115(b)(2)(F)]
9. **Maintenance of Emission Control**. The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification for upsets and maintenance in accordance with 30 TAC 101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC 116.115(b)(2)(G)]
10. **Compliance with Rules**. Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules, regulations, and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC 116.115(b)(2)(H)]
11. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC 116.110(e)]
12. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC 116.115(c)]
13. **Emissions** from this facility must not cause or contribute to a condition of "air pollution" as defined in Texas Health and Safety Code (THSC) 382.003(3) or violate THSC 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
14. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit.

Special Conditions

Permit Numbers 901 and PSDTX1334

1. This permit authorizes emissions from those points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates" (MAERT) and the facilities covered by this permit are authorized to emit subject to the emission rate limits on the MAERT and other requirements specified in the special conditions.

   Planned startup and shutdown emissions due to the activities identified in this permit are authorized from facilities and emission points at the site provided the facility and emissions are compliant with the respective MAERT and special conditions, or Special Condition 29 of this permit.

Federal Applicability

2. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories in 40 CFR Part 63:

   A. Subpart A, General Provisions.

   B. Subpart F, Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry.

   C. Subpart G, Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry Process Vents, Storage Vessels, Transfer Operations, and Wastewater.

   D. Subpart H, Organic Hazardous Air Pollutants for Equipment Leaks.

   E. Subpart Y, Marine Tank Vessel Loading Operations.

   F. Subpart DDDDD, Industrial, Commercial, and Institutional Boilers and Process Heaters.

   If any condition of this permit is more stringent than the applicable regulations in Special Condition No. 2, then for the purposes of complying with this permit, the permit shall govern and be the standard by which compliance shall be demonstrated.

Emission Standards and Operational Specifications

3. Maximum production rates shall be limited to the following:

   A. Methanol production shall be limited to 1,098,000 metric tons per year.

   B. Ammonia production shall be limited to 332,727 metric tons per year.

   C. Records of the actual production rates shall be maintained at the plant site and shall be immediately available to TCEQ personnel upon request. These records shall cover at least the most recent two-year period.

4. Fuel fired in the combustion sources or used as assist or pilot gas in flares shall be limited to the following:

A. Pipeline quality natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet (gr S/dscf); or

B. Plant purge gas (fuel gas) containing no more than 5 gr S/dscf.

5. Purge gas streams from the facility shall be designed and operated in accordance with the following requirements:

A. Emissions from the Dimethyl Ether Compressor [Facility Identification Number (FIN) MET/REF 48] shall be vented to the plant fuel gas system during normal operation. Emissions from this source may not be vented to the atmosphere during normal operation.

B. During normal operation, purge gas from the hydrogen purification unit shall be used as reformer fuel gas. The purge gas shall be routed to the Methanol Plant Flare (EPN 45) in the event of an upset, start up, or shutdown.

C. Purge gas from the Ammonia Plant shall be burned as fuel gas or sent to the flares.

Ammonia Plant

6. Ammonia handling and storage shall be designed and operated in accordance with the following requirements:

A. All operating practices and procedures relating to the handling and storage of NH_3 shall conform to the safety recommendations specified for that compound by guidelines of the American National Standards Institute and the Compressed Gas Association.

B. All plant operating/maintenance/emergency response personnel shall participate in continuing NH_3 handling and safety training. Training shall be conducted at least once per year. Records shall be kept which indicate the type of training given to each employee and the appropriate dates.

C. A fully-trained operator shall be on duty at all times. The plant or site entrance(s) shall be controlled at all times.

D. Emissions from storage of NH_3 emissions shall be controlled by a refrigeration system or vented to the Ammonia Storage Tank Flares (EPNs TKFLARE and ATK2FLR).

E. All block valves and connectors associated with NH_3 storage and transfer shall be properly maintained in a non-leaking condition at all times.

F. When transferring NH_3, all vapors shall be vented back to the host tank or to the flare header and never to the atmosphere.

G. The permit holder shall maintain an emergency response plan on-site at all times. The plan shall be implemented immediately following an accidental release of 100 or more pounds of NH_3. The emergency response plan shall include (but is not limited to) a call list of company personnel and local public safety personnel, a listing of

evacuation routes, and procedures for notifying the general public that an emergency exists and for requesting assistance to evacuate the public from the area of exposure. All operating personnel shall be thoroughly trained for implementing the procedures of this plan.

7. The Ammonia Plant Flare (EPN FL321) and Ammonia Storage Tank Flares (EPNs TKFLARE and ATK2FLR) shall be designed and operated in accordance with the following requirements:

   A. Venting of NH_3 and/or NH_3 synthesis gas from the ammonia process unit safety relief valves, maintenance, and bypass valves shall be controlled by the plant flare systems.

   B. The flare systems shall be designed such that the combined assist natural gas and waste stream to each flare meets the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal, and maintenance flow conditions.

   C. The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR § 60.18(f) may be requested by the appropriate regional office to demonstrate compliance with these requirements.

   D. The flare shall be operated with a flame present at all times and/or have a constant pilot flame when emissions may be vented to them. The pilot flame shall be continuously monitored by a thermocouple, infrared monitor, or ultraviolet monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated or have a calibration check performed, at a frequency in accordance with, the manufacturer's specifications.

   E. The flare shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours.

   F. A water spray system shall be installed to minimize NH_3 emissions events from any ammonia storage tanks.

Methanol Plant

8. The Reforming Furnaces and Pre-Reformer Fired Heater (EPN STK-41) shall be designed and operated in accordance with the following requirements:

   A. Except as specified in Special Condition No.29.A, Emissions from the Reforming Furnaces and Pre-Reformer Fired Heater (EPN STK-41) shall not exceed the following: **(03/15)**

Pollutant	24-hour rolling average	12-month rolling average
Nitrogen Oxides (NO_x)	0.008 lb/MMBtu	0.008 lb/MMBtu
Carbon Monoxide(CO)	100 ppmvd (3% oxygen)	50 ppmvd (3% oxygen)
Ammonia (NH_3)	15 ppmvd (3% oxygen)	10 ppmvd (3% oxygen)

9. The Methanol Storage Tanks (FINs TFX-33 and TFX-34) shall be designed and operated in accordance with the following requirements:

   A. Working loss and breathing loss emissions from the west and east methanol storage tanks shall be routed to the Methanol Storage Tanks Scrubber (EPN35).

      (1) The scrubbing liquid in the Water Scrubber System shall be circulated back to the plant for recovery of entrained VOC. The spent scrubbing liquid shall not be exposed directly to the atmosphere at any time.

      (2) The permit holder shall maintain the following records at the plant site for a minimum of two years:

         (a) Monthly analysis of percent methanol in the scrubbing solution; and

         (b) Liquid flows from scrubber to plant.

   B. Uninsulated methanol storage tank exterior surfaces exposed to the sun shall be white.

10. The Crude Methanol Storage Tank shall be designed and operated in accordance with the following requirements:

   A. Off-gas shall either be returned to process for recovery or treated in the Crude Methanol Tank Scrubber (EPN 328) before being emitted into the atmosphere.

      (1) The scrubber shall be in operation whenever the methanol manufacturing process is in operation unless all of the off-gas is being returned to the process.

      (2) The lower section of the scrubber shall be operated with a water/methanol solution circulating at a rate of at least 10 gallons per minute (gpm) not counting fresh water from the upper section.

      (3) The upper section of the water scrubber shall be operated with a fresh water spray with a rate of at least two gpm, unless the water/methanol solution is being re circulated in the lower section, in which case a fresh water spray rate of at least four gpm shall be maintained.

      (4) The company shall maintain the following records at the plant site for a minimum of five years:

         (a) Monthly analysis of percent methanol in the water/methanol solution in the scrubber bottoms; and

         (b) Liquid flow rates in the upper and lower sections of the scrubber.

11. The Methanol Plant Flare (EPN 45) and FL42 shall be designed and operated in accordance with the following requirements:

    A. The flare shall conform to the requirements set forth in 40 CFR § 60.18 with the exception of maximum tip velocity, which may be exceeded for safety reasons, provided the flare is operated in such a manner that destruction efficiency of methanol is no less than 99 percent.

    B. If necessary to insure adequate combustion, sufficient fuel gas shall be added to make the gases combustible.

    C. The flare shall be operated with a flame present at all times and have a constant pilot flame. The pilot flame shall be monitored by a thermocouple or an infrared monitor.

12. The Oil/Water Separator shall be vented through a carbon adsorption system (CAS) designated as EPN OWS325. The permittee shall keep a record of CAS refilling.

Methanol Loading

13. Emissions from marine loading methanol product shall be vented to the Flare (EPN 326). The flare shall be operated with no less than 99 percent efficiency in disposing of methanol vapors captured by the collection system.

14. Loading of methanol to tank trucks is limited to a combined loading rate of 24,000 barrels per hour and 58,400,000 gallons per year based on a 12 month rolling average.

    A. Emissions from loading methanol product to tank trucks shall be vapor balanced whereby emissions from loading are routed back to the source methanol tank.

    B. All lines and connectors shall be visually inspected for any defects prior to hookup. Lines and connectors that are visibly damaged shall be removed from service. All operations shall cease immediately upon detection of any liquid leaking from the lines or connections.

    C. Each tank truck shall pass vapor-tight testing every 12 months using the methods described in Title 40 Code of Federal Regulations Part 60 (40 CFR 60), Subpart XX.

    D. Throughput records of loading methanol to tank trucks shall be updated on a monthly and kept on a rolling 12 month basis.

Leak Detection and Repair

15. Piping, Valves, Connectors, Pumps, Agitators, and Compressors - 28VHP

    Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment:

A. The requirements of paragraphs F and G shall not apply (1) where the volatile organic compound (VOC) has an aggregate partial pressure or vapor pressure of less than 0.044 pound per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

(1) piping and instrumentation diagram (PID);

(2) a written or electronic database or electronic file;

(3) color coding;

(4) a form of weatherproof identification; or

(5) designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in subparagraph A above. If an unsafe to monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe to monitor times. A difficult to monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the isolation of equipment for hot work or the removal of a

component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

(1) a cap, blind flange, plug, or second valve must be installed on the line or valve; or

(2) the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once by the end of the 72 hours period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

F. Accessible valves shall be monitored by leak checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed at least quarterly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR Part 60, Appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

Replacements for leaking components shall be re-monitored within 15 days of being placed back into VOC service.

G. Except as may be provided for in the special conditions of this permit, all pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent

emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump, compressor, and agitator seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days. Records of the first attempt to repair shall be maintained.

I. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC § 115.782(c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC § 115.782(c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F through G of this condition.

L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

16. Piping, Valves, Connectors, Pumps, and Compressors in Ammonia (NH_3) Service

A. Audio, olfactory, and visual checks for NH_3 leaks within the operating area shall be made every four hours by operators during regular rounds. These checks shall be documented in the operator's log. These records shall be made available to TCEQ personnel upon request.

B. Immediately, but no later than four hours upon detection of a leak, plant personnel shall take at least one of the following actions as appropriate:

(1) Isolate the leak.

(2) Commence repair or replacement of the leaking component.

(3) Control the leak using such measures as leak collection/containment/water spray systems until repair or replacement can be made if immediate repair is not possible.

Date and time of each inspection shall be noted in the operator's log or equivalent. Records shall be maintained at the plant site of all repairs and replacements made. These records shall be made available to TCEQ personnel upon request.

Initial Demonstration of Compliance

17. Sampling ports and a platform shall be installed on the Methanol Storage Tanks Scrubber (EPN 35), and the Reformer Furnaces and Pre-Reformer Heater Stack (EPN STK-41) according to the specifications set forth in the attachment entitled "Chapter 2, Stack Sampling Facilities." Alternate sampling facility designs may be submitted for approval by the TCEQ Regional.

18. The permit holder shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the Methanol Storage Tanks Scrubber (EPN 35) and Reformer Furnaces and Pre-Reformer Heater Stack (EPN STK-41) to demonstrate compliance with the MAERT and Special Condition No. 8.A. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual and the U.S. Environmental Protection Agency (EPA) Reference Methods.

A. Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and

alternate/equivalent procedure proposals for 40 CFR Part 60 testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

B. The appropriate TCEQ Regional Office shall be notified not less than 45 days prior to sampling. The notice shall include:

(1) Proposed date for pretest meeting.

(2) Date sampling will occur.

(3) Name of firm conducting sampling.

(4) Type of sampling equipment to be used.

(5) Method or procedure to be used in sampling.

(6) Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.

(7) Procedure/parameters to be used to determine worst case emissions such as production rate, circulation rates for scrubbers, fuel rates for boilers and furnaces, etc., during the sampling period.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Regional Director must approve any deviation from specified sampling procedures.

C. Air contaminants emitted from the Methanol Storage Tanks Scrubber (EPN 35) to be tested for include (but are not limited to) VOC.

Air contaminants emitted from the Reformer Furnaces and Pre-Reformer Heater Stack (EPN STK-41) to be tested for include (but are not limited to) NO_x, CO, NH_3 and PM, including $PM_{2.5}$.

D. Sampling shall occur within 60 days after achieving the maximum operating rate, but no later than 180 days after increase in production and at such other times as may be required by the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the appropriate regional office.

E. Each synthesis gas reformer furnace shall operate at maximum rates during stack emission testing. Primary operation parameters that enable determination of rates shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting. If the furnace is unable to operate at maximum rates during testing, additional stack testing may be required when rates exceed 110 percent of the rates maintained during start-up stack sampling.

F. Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions entitled “Chapter 14, Contents of Sampling Reports” of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the appropriate TCEQ Regional Office.

One copy to each local air pollution control program.

Continuous Demonstration of Compliance

19. The permit holder shall install, calibrate, and maintain a continuous emission monitoring system (CEMs) to measure and record in-stack concentration of NO_x and CO from the Reformer Furnaces and Pre-Reformer Heater Stack (EPN STK-41).

    A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Air, Air Permits Division for requirements to be met.

    B. Section 1 below applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; Section 2 applies to all other sources:

        (1) The permit holder shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime shall be reported to the appropriate TCEQ Regional Manager, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Manager.

        (2) The system shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.

        Each monitor shall be quality-assured at least quarterly using Cylinder Gas Audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, with the following exception: a relative accuracy test audit (RATA) is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality-assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

        All CGA exceedances of +15 percent accuracy indicate that the CEMS is out of control.

    C. The monitoring data shall be reduced to hourly average concentrations at least once every day, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of pounds per hour (lbs/hr) and lb/MMBtu at least once every week as follows:

    The measured hourly average concentration from the CEMS shall be multiplied by the firing rate to determine the hourly emission rate.

D. All monitoring data and quality-assurance data shall be maintained by the source. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.

E. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required RATA in order to provide them the opportunity to observe the testing.

F. Quality-assured (or valid) data must be generated when the Synthesis Gas Reformer Furnaces are operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed five percent of the time (in minutes) that the Reformers operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Regional Director.

G. The permit holder shall install and operate a fuel flow meter to measure the gas fuel usage for each furnace and heater. The monitored data shall be reduced to an hourly average flow rate at least once every day, using a minimum of four equally-spaced data points from each one-hour period. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or equivalent, or at least annually, whichever is more frequent, and shall be accurate to within 5 percent. In lieu of monitoring fuel flow, the permit holder may monitor stack exhaust flow using the flow monitoring specifications of Title 40 of the Code of Federal Regulations Part 60 (40 CFR Part 60), Appendix B, Performance Specification 6 or 40 CFR Part 75, Appendix A.

20. The NH_3 concentration in the Reformer Furnaces and Pre-Reformer Heater Stack (EPN STK-41) shall be tested or calculated according to one of the methods listed below and shall be tested or calculated according to frequency listed below. Testing for NH_3 slip is only required when the SCR unit is in operation.

A. The holder of this permit may install, calibrate, maintain, and operate a CEMS to measure and record the concentrations of NH_3. The NH_3 concentrations shall be corrected in accordance with Special Condition No. 8.A.

B. As an approved alternative, the NH_3 slip may be measured using a sorbent or stain tube device specific for NH_3 measurement in the 5 to 10 ppm range. The frequency of sorbent or stain tube testing shall be daily for the first 60 days of operation, after which, the frequency may be reduced to weekly testing if operating procedures have been developed to prevent excess amounts of NH_3 from being introduced in the SCR unit and when operation of the SCR unit has been proven successful with regard to controlling NH_3 slip. Daily sorbent or stain tube testing shall resume when the catalyst is within 30 days of its useful life expectancy. These results shall be recorded and used to determine compliance Special Condition No. 8.A.

C. As an approved alternative to sorbent or stain tube testing or an NH_3 CEMS, the permit holder may install and operate a second NO_x CEMS probe located between

the firebox and the SCR, upstream of the stack NO_x CEMS, which may be used in association with the SCR efficiency and NH_3 injection rate to estimate NH_3 slip. This condition shall not be construed to set a minimum NO_x reduction efficiency on the SCR unit. These results shall be recorded and used to determine compliance with Special Condition No. 8.A.

D. If the sorbent or stain tube testing indicates an NH_3 slip concentration which exceeds 5 parts per million (ppm) at any time, the permit holder shall begin NH_3 testing by either the Phenol-Nitroprusside Method, the Indophenol Method, or EPA Conditional Test Method (CTM) 27 on a quarterly basis in addition to the weekly sorbent or stain tube testing. The quarterly testing shall continue until such time as the SCR unit catalyst is replaced; or if the quarterly testing indicates NH_3 slip is 4 ppm or less, the Phenol-Nitroprusside/Indophenol/CTM 27 tests may be suspended until sorbent or stain tube testing again indicate 5 ppm NH_3 slip or greater. These results shall be recorded and used to determine compliance with Special Condition No. 8.A.

E. As an approved alternative to sorbent or stain tube testing, NH_3 CEMS, or a second NO_x CEMS, the permit holder may install and operate a dual stream system of NO_x CEMS at the exit of the SCR. One of the exhaust streams would be routed, in an unconverted state, to one NO_x CEMS, and the other exhaust stream would be routed through a NH_3 converter to convert NH_3 to NO_x and then to a second NO_x CEMS. The NH_3 slip concentration shall be calculated from the delta between the two NO_x CEMS readings (converted and unconverted). These results shall be recorded and used to determine compliance with Special Condition No. 8.A.

F. Any other method used for measuring NH_3 slip shall require prior approval from the TCEQ Regional Director.

Planned Maintenance, Startup, and Shutdown Activities

21. This permit authorizes the emissions for the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment C) attached to this permit.

Attachment A identifies the inherently low emitting MSS activities that may be performed at the plant. Emissions from activities identified in Attachment A shall be considered to be equal to the potential to emit represented in the permit application. The estimated emissions from the activities listed in Attachment A must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate. If the emission calculation methodology changes, a permit by rule, permit amendment or alteration may be used, as appropriate, to change the estimated emissions.

Routine maintenance activities, as identified in Attachment B may be tracked through the work orders or equivalent. Emissions from activities identified in Attachment B shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

The performance of each planned MSS activity not identified in Attachments A or B and the emissions associated with it shall be recorded and include at least the following information:

A. The process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;

B. The type of planned MSS activity and the reason for the planned activity;

C. The common name and the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;

D. The date and time of the MSS activity and its duration;

E. The estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application or other methods approved in subsequent authorizations, consistent with good engineering practice.

All MSS emissions shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis.

22. Process units and facilities, with the exception of those identified in Special Conditions 24, 25, and 27, and Attachment A shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements.

A. The process equipment shall be depressurized to the process, a control device or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC partial pressure less than 0.50 psi at the actual temperature and 95°F may be opened to atmosphere and drained in accordance with paragraph C of this special condition. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to the process, a knockout drum or equivalent to allow for managed initial phase separation. If the cumulative VOC partial pressure is equal to or greater than 0.50 psi at either the actual temperature or 95°F, any vents in the system must be routed to the process, a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the VOC concentration is less than 10,000 ppmv or equivalent.

C. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids must be drained into the process, a closed vessel or closed liquid recovery system unless prevented by the physical configuration of the equipment. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained.

D. If the VOC partial pressure is greater than 0.50 psi at the actual process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the process, the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. The facilities to be degassed shall not be vented to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The process, control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

(1) For MSS activities identified in Attachment B, the following option may be used in lieu of (2) below. The facilities being prepared for maintenance shall not be vented directly to atmosphere until the VOC concentration has been verified to be less than 10 percent of the lower explosive limit (LEL) or to the equivalent limit established per the site safety procedures.

(2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (process flow diagrams [PFDs] or piping and instrumentation diagrams [P&IDs] may be used to demonstrate compliance with the requirement). If the process equipment is purged with a gas, two system volumes of purge gas must have passed through the control device or controlled recovery system before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. Equipment in methanol service may be sampled after water washing. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of Special Condition 23. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is a representative sample of the contents of the process equipment or vessel taken by the monitoring instrument. A sample may be taken upon entry into the system after degassing or water washing has been completed. The sample shall be taken from inside the vessel so as to minimize any air or dilution from the entry point. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. Documented site procedures used to de inventory equipment to a control device for safety purposes (i.e., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above.

E. Equipment containing gases and vapors with VOC partial pressure greater than or equal to 0.50 psi may be vented directly to atmosphere if all the following criteria are met:

(1) It is not technically practicable to depressurize or degas, as applicable, into the process.

(2) There is not an available connection to a plant control system.

(3) There is no more than 50 lb of air contaminant to be vented to atmosphere during shutdown or startup, as applicable.

Except when identified in Attachment A all instances of venting directly to atmosphere per Special Condition 22.E must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or documented for those planned MSS activities identified in Attachment B.

23. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR Part 60, Appendix A) with the following exceptions:

(1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor (RF) of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate (RF) shall be recorded. If the RF of the VOC (or mixture of VOCs) to be monitored is greater than 2.0, the VOC concentration shall be determined as follows:

VOC Concentration = Concentration as read from the instrument*RF

In no case should a calibration gas be used such that the RF of the VOC (or mixture of VOCs) to be monitored is greater than 5.0.

(2) Sampling shall be performed as directed by this permit in lieu of Section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least 5 minutes, recording VOC concentration each minute. As an alternative the VOC concentration may be monitored over a five minute period with an instrument designed to continuously measure concentration and record the highest concentration read. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

(1) The air contaminant concentration measured as defined in (3) is less than 80 percent of the range of the tube and is at least 20 percent of the maximum range of the tube.

(2) The tube is used in accordance with the manufacturer's guidelines.

(3) At least 2 samples taken at least 5 minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) < release concentration.

Where the release concentration is:

10,000*mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

(1) The detector shall be calibrated within 30 days of use with a certified methane gas standard at 25% of the lower explosive limit (LEL) for methane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.

(2) A daily functionality test shall be performed on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no lower than 90% of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.

24. This permit authorizes emissions from the storage tanks identified in the attached facility list during planned floating roof landings. Tank roofs may only be landed for changes of tank service or tank inspection/maintenance as identified in the permit application. Emissions from change of service tank landings, for which the tank is not cleaned and degassed, shall not exceed 10 tons of VOC in any rolling 12 month period. Tank roof landings include all operations when the tank floating roof is on its supporting legs. These emissions are subject to the maximum allowable emission rates indicated on the MAERT. The following requirements apply to tank roof landings.

A. The tank liquid level shall be continuously lowered after the tank floating roof initially lands on its supporting legs until the tank has been drained to the maximum extent practicable without entering the tank. Liquid level may be maintained steady for a period of up to two hours if necessary to allow for valve lineups and pump changes necessary to drain the tank. This requirement does not apply where the vapor under a floating roof is routed to control or a controlled recovery system during this process.

B. If the VOC partial pressure of the liquid previously stored in the tank is greater than or equal to 0.50 psi at 95°F, tank refilling or degassing of the vapor space under the landed floating roof must begin within 24 hours after the tank has been drained unless the vapor under the floating roof is routed to control or a controlled recovery system during this period. The tank shall not be opened except as necessary to set up for degassing and cleaning, Floating roof tanks with liquid capacities less than 100,000 gallons may be degassed without control if the VOC partial pressure of the

standing liquid in the tank has been reduced to less than 0.02 psia prior to ventilating the tank. Controlled degassing of the vapor space under landed roofs shall be completed as follows:

(1) Any gas or vapor removed from the vapor space under the floating roof must be routed to a control device or a controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. The locations and identifiers of vents other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when degassing to the control device or controlled recovery system.

(2) The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design.

(3) A volume of purge gas equivalent to twice the volume of the vapor space under the floating roof must have passed through the control device or into a controlled recovery system or the tank (methanol service only) must be water washed, before the vent stream may be sampled to verify acceptable VOC concentration. The measurement of purge gas volume shall not include any make-up air introduced into the control device or recovery system. The VOC sampling and analysis shall be performed as specified in Special Condition 23.

(4) The sampling point shall be upstream of the inlet to the control device or controlled recovery system.

The sample ports and the collection system must be designed and operated such that there is a representative sample of the contents of the vessel taken by the monitoring instrument. A sample may be taken upon entry into the vessel after degassing or water washing has been completed.

(5) Degassing or water washing must be performed every 24 hours unless there is no standing liquid in the tank or the VOC partial pressure of the remaining liquid in the tank is less than or equal to 0.15 psia.

C. The tank shall not be opened or ventilated without control, unless it meets requirements in (C)(1) or (C)(2), until one of the criteria in Part D of this condition is satisfied.

Minimize air circulation in the tank vapor space by:

(1) One manway may be opened to allow access to the tank to remove or de-volatilize the remaining liquid. Other manways or access points may be opened as necessary to remove or de-volatilize the remaining liquid. Wind barriers shall be installed at all open manways and access points to minimize air flow through the tank.

(2) Access points shall be closed when not in use

D. The tank may be opened without restriction and ventilated without control, after all standing liquid has been removed from the tank or the liquid remaining in the tank has a VOC partial pressure less than 0.02 psia. These criteria shall be demonstrated in any one of the following ways.

(1) Low VOC partial pressure liquid that is soluble with the liquid previously stored may be added to the tank to lower the VOC partial pressure of the liquid mixture remaining in the tank to less than 0.02 psia. This liquid shall be added during tank degassing if practicable. The estimated volume of liquid remaining in the drained tank and the volume and type of liquid added shall be recorded. The liquid VOC partial pressure may be estimated based on this information and engineering calculations.

(2) If water is added or sprayed into the tank to remove standing VOC, one of the following must be demonstrated:

(a) Take a representative sample of the liquid remaining in the tank and verify no visible sheen using the static sheen test from 40 CFR Part 435, Subpart A, Appendix 1.

(b) Take a representative sample of the liquid remaining in the tank and verify hexane soluble VOC concentration is less than 1000 ppmw using EPA method 1664 (may also use 8260B or 5030 with 8015 from SW-846).

(c) Stop ventilation and close the tank for at least 24 hours. When the tank manway is opened after this period, verify VOC concentration is less than 1000 ppmv through the procedure in Special Condition 23.

(3) No standing liquid verified through visual inspection.

The permit holder shall maintain records to document the method used to release the tank.

E. Tanks shall be refilled as rapidly as practicable until the roof is off its legs with the following exceptions:

(1) Only one tank with a landed floating roof can be filled at any time at a rate not to exceed 42,000 gal per hr.

(2) The vapor space below the tank roof is directed to a control device when the tank is refilled until the roof is floating on the liquid. The control device used and the method and locations used to connect the control device shall be recorded. All vents from the tank being filled must exit through the control device.

F. The occurrence of each roof landing and the associated emissions shall be recorded and the rolling 12-month tank roof landing emissions shall be updated on a monthly basis. These records shall include at least the following information:

(1) the identification of the tank and emission point number, and any control devices or recovery systems used to reduce emissions;

(2) the reason for the tank roof landing;

(3) for the purpose of estimating emissions, the date, time, and other information specified for each of the following events:

(a) the roof was initially landed,

(b) all liquid was pumped from the tank to the extent practical,

(c) start and completion of controlled degassing, and total volumetric flow,

(d) all standing liquid was removed from the tank or any transfers of low VOC partial pressure liquid to or from the tank including volumes and vapor pressures to reduce tank liquid VOC partial pressure to <0.02 psi,

(e) if there is liquid in the tank, VOC partial pressure of liquid, start and completion of uncontrolled degassing, and total volumetric flow,

(f) refilling commenced, liquid filling the tank, and the volume necessary to float the roof, and

(g) tank roof off supporting legs, floating on liquid;

(4) the estimated quantity of each air contaminant, or mixture of air contaminants, emitted between Events c and g with the data and methods used to determine it. The emissions associated with roof landing activities shall be calculated using the methods described in Section 7.1.3.2 of AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids" dated November 2006 and the permit application.

25. Fixed roof storage tanks are subject to the requirements of Special Condition 24C and 24D. If the ventilation of the vapor space is controlled, the emission control system shall meet the requirements of Special Condition 24B(1) through 24B(4). Records shall be maintained per Special Condition 24E(3)c through 24E(3)e, and 24E(4).

26. The following requirements apply to vacuum and air mover truck operations in VOC service to support planned MSS at this site:

A. Prior to initial use, identify any liquid in the truck. Record the liquid level and document the VOC partial pressure. After each liquid transfer, identify the liquid, the volume transferred, and its VOC partial pressure.

B. If vacuum pumps or blowers are operated when liquid is in or being transferred to the truck, the following requirements apply:

(1) If the VOC partial pressure of the liquid in or being transferred to the truck is greater than or equal to 0.50 psi at 95°F, the vacuum/blower exhaust shall be routed to a control device or a controlled recovery system.

(2) Equip fill line intake with a "duckbill" or equivalent attachment if the hose end cannot be submerged in the liquid being collected.

(3) A daily record containing the information identified below is required for each vacuum truck in operation at the site each day that transfers VOCs.

(a) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a "duckbill" or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.

(b) If the vacuum truck exhaust is controlled with a control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and at least every hour during each transfer shall be recorded, measured using an instrument meeting the requirements of Special Condition 23A or B.

C. Record the volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.

D. The permit holder shall determine the vacuum truck emissions each month using the daily vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12 month vacuum truck emissions shall also be determined on a monthly basis.

E. If the VOC partial pressure of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in Special Condition 26A through 26D do not apply.

27. The following requirements apply to frac, or temporary, tanks and vessels in VOC service used in support of MSS activities.

A. The exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum effective May 1, 2013. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled, sampled, gauged, or when removing material.

B. These tanks/vessels must be covered and equipped with fill pipes that discharge within 6 inches of the tank/vessel bottom.

C. These requirements do not apply to vessels storing less than 450 gallons of liquid that are closed such that the vessel does not vent to atmosphere except when filling, sampling, gauging, or when removing material.

D. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all frac tanks during the previous calendar month and the past consecutive 12 month period. The record shall include tank identification number, dates put into and removed from service, control method used, tank

capacity and volume of liquid stored in gallons, name of the material stored, VOC molecular weight, and VOC partial pressure at the estimated monthly average material temperature in psia. Filling emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Loading Operations" and standing emissions determined using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."

E. If the tank/vessel is used to store liquid with VOC partial pressure less than 0.10 psi at 95°F, records may be limited to the days the tank is in service and the liquid stored. Emissions may be estimated based upon the potential to emit as identified in the permit application.

28. Additional occurrences of MSS activities authorized by this permit may be authorized under permit by rule only if conducted in compliance with this permit's procedures, emission controls, monitoring, and recordkeeping requirements applicable to the activity.

29. All permanent facilities must comply with all operating requirements, limits, and representations in this permit during planned startup and shutdown unless alternate requirements and limits are identified in this permit. Alternate requirements for emissions from routine emission points are identified below.

A. Combustion units, with the exception of flares, at this site are exempt from NO_x and CO operating requirements identified in Special Condition Number 8 of this permit during planned maintenance startup and shutdown if the following criteria are satisfied.

(1) The maximum allowable emission rates in the permit authorizing the facility are not exceeded.

(2) The startup period does not exceed 96 hours in duration and the firing rate does not exceed 75 percent of the design firing rate. The time it takes to complete the shutdown does not exceed 36 hours.

(3) Control devices are started and operating properly when venting a waste gas stream.

B. A record shall be maintained indicating that the start and end times of each of the activities identified above occur and

C. documentation that the requirements for each have been satisfied.

30. Temporary control devices required by this permit for emissions from planned MSS activities are limited to those types identified in this condition. Control devices shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. Each device used must meet all the requirements identified for that type of control device.

Controlled recovery systems identified in this permit shall be directed to an operating process or to a collection system that is vented through a control device meeting the requirements of this permit condition.

A. Carbon Adsorption System (CAS).

(1) The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.

(2) The CAS shall be sampled downstream of the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:

(a) It may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall maintain records including the calculations performed to determine the minimum saturation time.

(b) The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If the VOC concentration on the initial sample downstream of the first carbon canister following a new polishing canister being put in place is greater than 100 ppmv above background, it shall be assumed that breakthrough occurred while that canister functioned as the final polishing canister and a permit deviation shall be recorded.

(3) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition 23A or 23B.

(4) Breakthrough is defined as the highest measured VOC concentration at or exceeding 100 ppmv above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within four hours. Sufficient new activated carbon canisters shall be maintained at the site to replace spent carbon canisters such that replacements can be done in the above specified time frame.

(5) Records of CAS monitoring shall include the following:

(a) Sample time and date.

(b) Monitoring results (ppmv).

(c) Canister replacement log.

(6) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on

carbon canister service shall be recorded and the expiration date attached to the carbon can.

B. The temporary flare system

(1) The heating value and velocity requirements in 40 CFR § 60.18 shall be satisfied during operations authorized by this permit.

(2) The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.

C. A liquid scrubbing system may be used upstream of carbon adsorption. A single carbon can or a liquid scrubbing system may be used as the sole control device if the requirements below are satisfied.

(1) The exhaust to atmosphere shall be monitored continuously and the VOC concentration recorded at least once every 15 minutes when waste gas is directed to the scrubber.

(2) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition 23A or an equivalent method approved by the Region.

(3) An alarm shall be installed such that an operator is alerted when outlet VOC concentration exceeds 100 ppmv above background. The MSS activity shall be stopped as soon as possible when the VOC concentration exceeds 100 ppmv above background for more than one minute. The date and time of all alarms and the actions taken shall be recorded.

D. A closed loop refrigerated vapor recovery system

(1) The vapor recovery system shall be installed on the facility to be degassed using good engineering practice to ensure air contaminants are flushed from the facility through the refrigerated vapor condensers and back to the facility being degassed. The vapor recovery system and facility being degassed shall be enclosed except as necessary to insure structural integrity (such as roof vents on a floating roof tank).

(2) VOC concentration in vapor being circulated by the system shall be sampled and recorded at least once every 4 hours at the inlet of the condenser unit with an instrument meeting the requirements of Special Condition 23.A or an equivalent approved by the Region.

(3) The quantity of liquid recovered from the tank vapors and the tank pressure shall be monitored and recorded each hour. The liquid recovered must increase with each reading and the tank pressure shall not exceed one inch water pressure while the system is operating.

31. This permit authorizes emissions from EPNs 45, MET-COM48, FL321, 328, and TK320 for the following maintenance, start-up, and shutdown activities:

    A. Purging of equipment.

    B. List of the activities control device maintenance.

    C. Start-up of equipment and process.

    D. Shutdown of equipment and process.

    E. Repair of equipment.

    These emissions are subject to the maximum allowable emission rates indicated on the maximum allowable emission rates table.

Recordkeeping

32. The permit holder shall maintain required records electronically or in hard copy format for at least five years. These records shall be used to demonstrate compliance with the Special Conditions and the limits specified in the MAERT.

Date: March 20, 2015

Permit Numbers 901 and PSDTX1334

Attachment A

Inherently Low Emitting Activities

Activity	Emissions				
	VOC	**NO_X**	**CO**	**PM**	**H_2S/SO_2**
Solid Material Transferring (EPN: SWASTE)				x	
Lube Oil (EPN: LUBES)	x				
N2 Sweep of Lube Oil Consoles (EPN: LUBES)	x				
Miscellaneous Maintenance (EPN: MISCMT)	x				

Date: July 22, 2014

Permit Numbers 901 and PSDTX1334

Attachment B

Routine Maintenance Activities

Diesel Pump Activities

Natural Gas Pipeline Degassing

Temporary Tankage (Maintenance)

Dock Spill Control and Maintenance Tanks

Sampling Activities

Catalyst Handling

Analyzer Gas Activities

Date: July 22, 2014

Permit Numbers 901 and PSDTX1334

Attachment C

MSS Activity Summary

Facilities	Description	Emissions Activity	EPN
See Attachment A	Miscellaneous low emitting activities	Emissions to atmosphere solid waste handling, lube oil operations, use of spray aerosols/application of greases, etc.,	SWASTE, LUBES MISCMT
See Attachment B	Routine Maintenance Activities	Sampling activities, catalyst handling, analyzer calibrations	SAMPLE, CATHD, ANAGAS
Ammonia Tank and Equipment	Ammonia Tank and Equipment Deinventory	Clearing to Flare	TKFLARE
Methanol Tank and Equipment	Methanol Tank and Equipment Deinventory	Clearing to Flare	45
Refined Receiver Tank	Degassing of Refined Receiver Tank to Flare	Clearing to Flare	TEMPFLR
Process Units	Process unit equipment purge/degas, emergency engine operation, temporary tankage, scrubber shutdowns, floating roof tank roof landings/degas	Clearing/Venting to Atmosphere Ammonia tank clearing, firepump engine operation, equipment/piping degassing, frac tank use, scrubber shutdowns, IFR tank roof landings	TK320, MET-PMP247, AFUG322M, MEOHEQCLR, TEMPTK, TK9067, TFK-35M, TFX-328M, MET-TFL50M
Vacuum Truck	vacuum truck activities	vacuum truck activities	VACTRK

Date: July 22, 2014

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Number 901 and PSDTX1334

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
Methanol Plant				
STK-41	Reforming Furnaces and Pre-Reformer Fired Heater	NO_x	18.00	79.35
		NO_x (MSS)	152.00	--
		CO	218.56	476.48
		VOC	12.13	52.87
		SO_2	1.26	5.47
		PM	16.76	73.04
		PM_{10}	16.76	73.04
		$PM_{2.5}$	16.76	73.04
		NH_3	19.90	57.77
35	Methanol East and West Shore Tanks	VOC	7.53	7.96
35M	Shore Tank Scrubber MSS	VOC	82.66	8.43
FL42	Reformer Flare	NO_x	0.23	0.54
		CO	1.48	2.63
		VOC	4.22	3.70
		SO_2	0.01	0.01

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
FL42M	Reformer Flare (MSS)	NO_x	653.34	3.61
		CO	4253.54	30.91
		VOC	86.68	0.42
45	Methanol Plant Flare	NO_x	0.06	0.28
		CO	0.27	1.16
		VOC	0.01	0.02
		SO_2	0.01	0.01
45M	Methanol Plant Flare (MSS)	NO_x	258.82	1.72
		CO	2219.15	14.78
		VOC	99.77	0.48
328	Crude Methanol Tank Scrubber	VOC	27.70	35.00
		VOC (MSS)	258.00	--
		CO	8.00	35.04
MET-CLT246	Methanol Cooling Tower	VOC	0.27	1.20
		PM	11.75	51.47
		PM_{10}	9.12	39.96
		$PM_{2.5}$	0.03	0.13
MET-COM48	DME Compressor Vent (MSS)	VOC	2028.00	1.80

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
MET-PMP274	Standby Diesel Pump	NO_x	7.75	1.5
		CO	1.67	0.32
		VOC	0.63	0.12
		SO_2	0.51	0.10
		PM	0.55	0.11
		PM_{10}	0.55	0.11
		$PM_{2.5}$	0.55	0.11
MET-STK44	Carbon Dioxide Stripper Vent	CO	19.10	2.30
		NH_3	8.30	0.50
MET-TFL50	Refined Methanol Tank	VOC	0.20	0.21
MET-TFL50M	Refined Receiver Maintenance	VOC	32.77	0.04
MET-FUG247	Fugitives-Methanol Area (5)	VOC	1.25	5.46
MEOHTRK	Methanol Truck Loading Fugitives (5)	VOC	1.78	1.08
Ammonia Plant				
FL321	Ammonia Plant Flare	NO_x	0.90	3.94
		CO	1.85	8.09
		VOC	0.10	0.40
		SO_2	0.01	0.01
		NH_3	2.59	11.34

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
FL321M	Ammonia Plant Flare (MSS)	NO_x	91.46	1.46
		CO	1.32	0.40
		NH_3	32.41	0.52
		SO_2	0.01	0.01
TKFLARE	Ammonia Storage Tank Flare	NO_x	0.02	0.10
		CO	0.04	0.20
		VOC	0.10	0.01
		SO_2	0.01	0.01
TKFLAREM	Ammonia Storage Tank Flare (MSS)	NO_x	16.62	1.10
		NH_3	30.47	1.91
		CO	5.06	0.42
		VOC	0.05	0.02
		SO_2	0.01	0.02
ATK2FLR	Ammonia Storage Flare	CO	0.39	1.72
		NH_3	45.07	0.95
		NO_x	25.94	1.34
		SO_2	0.01	0.01
		VOC	0.01	0.03
ATK2FLR	Ammonia Storage Flare (MSS)	NH_3	11.11	0.40
		NO_x	6.12	0.22
AFUG322	Fugitives-Ammonia Plant (5)	NH_3	0.47	2.04

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
AFUG322M	Ammonia Plant Equipment Degassing	NH_3	0.01	0.01
ASTORFUG	Storage Tank Fugitives (5)	NH_3	0.07	0.32
AWARMFUG	Warm Pipeline Fugitives (5)	NH_3	0.02	0.10
CTW323	Ammonia Cooling Tower	NH_3	0.84	3.68
		PM (5)	2.45	10.72
		PM_{10}(5)	1.90	8.33
		$PM_{2.5}$ (5)	0.01	0.03
HTR324	Ammonia Plant Start-Up Heater	NO_x	1.30	0.10
		CO	1.10	0.10
		VOC	0.10	0.01
		SO_2	0.01	0.01
		PM	0.10	0.01
		PM_{10}	0.10	0.01
		$PM_{2.5}$	0.10	0.01
HTR401	Glycol Heater No. 1	CO	1.42	6.24
		NO_x	2.08	9.09
		PM	0.13	0.56
		PM_{10}	0.13	0.56
		$PM_{2.5}$	0.13	0.56
		SO_2	0.01	0.04
		VOC	0.09	0.41

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
HTR402	Glycol Heater No. 2	CO	1.42	6.24
		NO_x	2.08	9.09
		PM	0.13	0.56
		PM_{10}	0.13	0.56
		$PM_{2.5}$	0.13	0.56
		SO_2	0.01	0.04
		VOC	0.09	0.41
Wastewater				
OWS325	Oil/Water Separator CAS	VOC	0.01	0.01
Marine Loading				
326	Marine Vapor Control System Product Flare	NO_x	2.19	2.32
		CO	18.70	19.63
		VOC	8.62	2.74
		SO_2	0.02	0.02
327	Fugitives-Product Loading (5)	VOC	0.03	0.14
Planned Maintenance, Startup and Shutdown (MSS)				
VACTRK	Vacuum Truck Loading Activities	VOC	1.70	0.01
SAMPLE	Sampling Activities	VOC	1.01	0.14
		NH_3	0.09	0.03
MEOHEQCLR	Methanol Plant Equipment Degassing	VOC	23.24	1.18
		H_2S	0.01	0.01

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
TEMPTK	Temporary Tankage	VOC	2.22	0.04
TK9067	Dock Spill Control & Maintenance Tank Activities	VOC	1.18	0.04
CATHD	Catalyst Handling Activities	PM	4.55	0.12
		PM_{10}	1.10	0.03
		$PM_{2.5}$	0.55	0.01
ANAGAS	Analyzer Gas Emissions	VOC	1.65	0.03
		NO_x	0.01	0.01
		CO	1.13	0.02
		NH_3	0.10	0.01
TK320	Ammonia Tank De-Inventory	NH_3	0.37	0.01
TEMPFLR	Temporary Flare	VOC	0.91	0.01
		NO_x	0.03	0.01
		CO	0.26	0.01
		SO_2		
AMMRV	Ammonia Relief Valves (MSS)	NH_3	0.02	0.01
EQCLR	Equipment Clearing (MSS)	NH_3	0.04	0.01

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
NH_3 - ammonia

(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Date: March 20, 2015

PREVENTION OF SIGNIFICANT DETERIORATION PERMIT
FOR GREENHOUSE GAS EMISSIONS
ISSUED PURSUANT TO THE REQUIREMENTS AT 40 CFR § 52.21

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 6

PSD PERMIT NUMBER:	PSD-TX-1334-GHG
PERMITTEE:	OCI Beaumont LLC
FACILITY NAME:	OCI Beaumont LLC
FACILITY LOCATION:	5470 N. Twin City Hwy Nederland, Jefferson County, Texas 75861

Pursuant to the provisions of the Clean Air Act (CAA), Subchapter I, Part C (42 U.S.C. Section 7470, *et seq.*), and the Code of Federal Regulations (CFR) Title 40, Section 52.21, and the Federal Implementation Plan at 40 CFR § 52.2305 (effective May 1, 2011 and published at 76 FR 25178), the U.S. Environmental Protection Agency (EPA), Region 6 is issuing a Prevention of Significant Deterioration (PSD) permit to OCI Beaumont LLC (OCI) for Greenhouse Gas (GHG) emissions. The Permit applies to the construction of a new pre-reformer heater, pre-reformer, flare and saturator column, in addition to miscellaneous process optimization changes which will increase the capacity of the existing methanol and ammonia plants located in Nederland, Jefferson County, Texas.

OCI is authorized to construct the pre-reformer heater, pre-reformer, flare and saturator column and modify the operations of the methanol and ammonia plants as described herein, in accordance with the permit application (and plans submitted with the permit application), the federal PSD regulations at 40 CFR § 52.21, and other terms and conditions set forth in this PSD permit in conjunction with the corresponding Texas Commission on Environmental Quality (TCEQ) permit PSD-TX-1334. Failure to comply with any condition or term set forth in this PSD permit may result in enforcement action pursuant to Section 113 of the Clean Air Act (CAA). This PSD permit does not relieve OCI of the responsibility to comply with any other applicable provisions of the CAA (including applicable implementing regulations in 40 CFR Parts 51, 52, 60, 61, 72 through 75, and 98) or other federal and state requirements (including the state PSD program that remains under approval at 40 CFR § 52.2303).

In accordance with 40 CFR §124.15(b)(3), this PSD Permit becomes effective immediately upon issuance of this final decision.

Wren Stenger, Director

8/1/14
Date

PROJECT DESCRIPTION

OCI currently operates a methanol and ammonia plant in Nederland, Texas. OCI is requesting an amendment to an existing TCEQ permit and a GHG PSD permit from EPA to increase production from the existing methanol plant by constructing a pre-reformer heater, pre-reformer, a saturator column, reformer flare, and to modify the existing two reformer furnaces with larger-diameter tubes in the methanol plant. There will also be process and energy optimization modifications to the methanol and ammonia plants. Modifications include equipping the heaters with selective catalytic reduction (SCR) technology to reduce NO_x emissions and operational optimizations between the two plants since hydrogen from the methanol plant is used as feed for the ammonia plant, as well as using CO_2 to supplement the feed to the reformers for methanol production.

The ammonia plant will have an increase in GHG emissions from the ammonia plant flare resulting from the purge gas of the ammonia reactor. With the proposed construction, modifications and optimizations, the methanol capacity of the plant will be increased to 1,098,000 metric tons per year and the ammonia plant will have a 12% increase in production to 332,727 metric tons per year.

PROCESS OPERATIONS

The primary feedstock for the methanol plant is natural gas which is combusted with recycle streams (process fuel gas) from various units to produce Syngas. The Syngas is converted to methanol in the reactors, and then refined in four distillation columns to produce the final methanol product, hydrogen gas and a gaseous recycle stream. Methanol is shipped via the docks or pipeline to various customers. The hydrogen gas is sent to the ammonia plant where it is purified to remove the organic components (which are recycled to the fuel gas system of the reformers), and then combined with nitrogen in a converter reactor to form ammonia. The ammonia is condensed, purified, depressurized for additional cooling and then shipped as liquid ammonia from the ammonia refrigeration system.

EQUIPMENT LIST

The emission units (identified by Facility Information Numbers (FIN) and Emission Point Number (EPN) authorized by and subject to the requirements of this GHG PSD permit. No other GHG emitting sources are authorized by this permit.

Emission Units

EPN	FIN	Description
STK41	RFM41	Reformer Furnaces modified to have larger tube diameters
	PRFMHTR	New Pre-Reformer and Pre-Reformer heater unit
	SCRDCTBRN	New SCR Unit Duct Burner for NOx control for all Reformers and new Pre-Reformer heater
FL42	FL42	New Reformer MSS Flare (startup and shutdown) and vent from stripper tailgas tank
MET-FUG247	MET-FUG247	Methanol plant process fugitive equipment (New and Existing)

I. GENERAL PERMIT CONDITIONS

A. Permit Expiration

1. As provided in 40 CFR §52.21(r), this PSD Permit shall become invalid if construction:
   a. is not commenced (as defined in 40 CFR §52.21(b)(9)) within 18 months after the approval takes effect; or
   b. is discontinued for a period of 18 months or more; or
   c. is not completed within a reasonable time.
2. Pursuant to 40 CFR §52.21(r), EPA may extend the 18-month period upon a written satisfactory showing that an extension is justified.

B. Permit Notification Requirements

1. Permittee shall notify EPA Region 6 in writing and by electronic mail of the:
   a. date construction is commenced, postmarked within 30 days of such date;
   b. actual date of initial startup, as defined in 40 CFR §60.2, postmarked within 15 days of such date;
   c. date upon which initial performance tests will commence, in accordance with the provisions of Special Condition VI not less than 30 days prior to such date.

C. Facility Operations

At all times, including periods of startup, shutdown, and maintenance, Permittee shall, to the extent practicable, maintain and operate the facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the EPA, which may include, but is not limited to, monitoring results, review of operating maintenance procedures and inspection of the facility.

D. Malfunction Reporting

1. Permittee shall notify EPA Region 6 by mail within 48 hours following the discovery of any failure of air pollution control equipment, process equipment, or of a process to

operate in a normal manner, which results in an increase in GHG emissions above the allowable emission limits stated in Section II of this permit.

2. Within 10 days of the restoration of normal operations after any failure described in General Condition I.D.1 of this permit, Permittee shall provide a written supplement to the initial notification that includes a description of the malfunctioning equipment or abnormal operation, the date of the initial malfunction, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed in Section II, the methods utilized to mitigate emissions and the date normal operations were restored.
3. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violation of this permit or any law or regulation such malfunction may cause.

E. Right of Entry

1. EPA authorized representatives, or representatives of any air pollution control program with jurisdiction, upon the presentation of credentials, shall be permitted:

   a. to enter the premises where the facility is located or where any records are required to be kept under the terms and conditions of this PSD Permit;
   b. during normal business hours, to have access to and to copy any records required to be kept under the terms and conditions of this PSD Permit;
   c. to inspect any equipment, operation, or method subject to requirements in this PSD Permit; and,
   d. to sample materials and emissions from the source(s).

F. Transfer of Ownership

In the event of any changes in control or ownership of the facilities to be constructed, this PSD Permit shall be binding on all subsequent owners and operators. Permittee shall notify the succeeding owner and operator of the existence of the PSD permit and its conditions by letter; a copy of the letter shall be forwarded to EPA Region 6 within thirty days of the letter signature.

G. Severability

The provisions of this PSD Permit are severable, and, if any provision of the PSD Permit is held invalid, the remainder of this PSD Permit shall not be affected.

H. Adherence to Application and Compliance with Other Environmental Laws

Permittee shall construct and operate this project in compliance with this PSD Permit, the application on which this permit is based, TCEQ PSD Permit PSD-TX-1334 and all other applicable federal, state, and local air quality regulations. This PSD permit does not release the Permittee from any liability for compliance with other applicable federal, state and local environmental laws and regulations, including the Clean Air Act.

II. Acronyms And Abbreviations

AVO	Auditory, Visual, and Olfactory
BACT	Best Available Control Technology
CH_4	Methane
CAA	Clean Air Act
CC	Carbon Content
CCS	Carbon Capture and Sequestration
CEMS	Continuous Emissions Monitoring System
CFR	Code of Federal Regulations
CGA	Cylinder Gas Audit
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DRE	Destruction and Removal Efficiency
EF	Emission Factor
EPN	Emission Point Number
FIN	Facility Identification Number
FR	Federal Register
GCV	Gross Calorific Value
GHG	Greenhouse Gas
GWP	Global Warming Potential
HHV	High Heating Value
HRVOC	Highly Reactive Volatile Organic Compounds
MT	Metric Tons
lb	Pound
LDAR	Leak Detection and Repair
LEL	Lower Explosive Limit
LHV	Lower Heating Value
MMBtu	Million British Thermal Units
MSS	Maintenance, Start-up and Shutdown
N_2O	Nitrous Oxides
NOx	Nitrogen Oxides
NSPS	New Source Performance Standards
O_2	Oxygen

III. ANNUAL EMISSIONS LIMITATIONS

Emission Limits

EPN	Description	GHG Mass Basis		TPY[1,2,3] CO_2e	BACT Limits & Conditions
			TPY[1]		
STK 41	Reformer furnaces, Preheater and SCR duct burner	CO_2	1,173,573	1,178,593	1. Stack temperature to be monitored and not to exceed 422^0 F on an hourly basis, using SCR. Condition IV.2.k 2. Reformer net thermal efficiency 88% based on initial tests. Condition IV.2.l 3. Methanol output BACT limit of 33MMBtu (LHV)/MT on a 12 month rolling average (excluding fuel to the SCR burner)
		CH_4	59.34		
		N_2O	11.87		
FL42	Reformer MSS flare	CO_2	16,721	23,417	1. Use only for startup, shutdown and maintenance activities, and for the stripper tails tank vent. Condition IV.3 2. Meet 40 CFR 60.18 requirements and efficiency of 99%.
		CH_4	265.82		
		N_2O	0.17		
MET-FUG247	Methanol plant fugitives	CO_2	15	80	Work practice standards as noted in Special Condition IV.4
		CH_4	2.6		
	Totals[4]	CO_2	1,190,309	1,202,090	
		CH_4	327.76		
		N_20	12.29		

1. Compliance with the annual emission limits (tons per year) is based on a 12-month rolling total.
2. The TPY emission limits specified in this table are not to be exceeded for this facility and include emissions from the facility during all operations and include MSS activities. This total is rounded off for estimation purposes to two significant figures.
3. Global Warming Potentials (GWP): CO_2 =1, CH_4 = 25, N_2O = 298
4. Totals are given for informational purposes only and do not constitute emission limits.

IV. SPECIAL PERMIT CONDITIONS

A. Emission Unit Work Practice Standards, Operational Requirements, and Monitoring

1. <u>Fuel for Reformers and Pre- reformer Heater and Flare</u>

   a. Fuel to all combustion units identified in the permit shall use only pipeline natural gas and/or plant process fuel gas.
   b. A gas composition monitor/chromatograph should be installed after the point where the process fuel gas mixes with the natural gas or on the process gas line to determine the composition and carbon content of the gas.

c. The fuel gas monitor shall meet the requirements per 40 CFR §98.34(b)(3)(ii)(E) and/or 40 CFR §98.244(b)(4), for the gas chromatograph.
d. If the fuel gas monitor/chromatograph is installed prior to mixing with natural gas, the natural gas quality and carbon content will be obtained by semiannual testing, pursuant to 40 CFR §98.34(b)(3)(A).
e. The fuel analysis shall at a minimum allow for the determination of the fuel volumetric heat content, carbon content, and molecular composition.
f. The heat input as HHV (MMBtu/hr, upper heating value basis) shall be calculated with results from the gas chromatograph and the results recorded.
g. The annual value for determining GHG emissions from the total fuel used will be recorded using equation 40 CFR § 98.3(a)(1)(i), Equation C-2b daily. Upon request, Permittee shall provide a sample and/or analysis of the fuel that is fired in the units covered by this permit at the time of the request, or shall allow a sample to be taken by EPA for analysis.
h. The fuel flow rate to the combustion units will be monitored using an operational non-resettable elapsed flow meter, or by recording the flow rate data in an electronic format with individual flow measurements being taken no less frequently than once every 15 minutes. A computer that collects, sums and stores electronic data from continuous fuel flow meters is an acceptable totalizer. Electronic data may be reduced to hourly averages for recordkeeping.
i. The fuel meter measurement will meet the requirements of 40 CFR § 98.3(i) and quality assurance requirements of 40 CFR §98.3(i)(2) & (3).
j. Permittee shall calibrate and perform preventative maintenance checks of the fuel gas flow meters and document at the minimum frequency established per the manufacturer's recommendation, or at the interval specified per 40 CFR §98.34(b)(1)(ii).

2. Reformers, Pre-Reformer Heater and SCR Duct Burner (EPN STK41)

a. The feed to the reformer shall be pipeline natural gas and/or plant process fuel gas.
b. Permittee shall install, operate, and maintain an oxygen analyzer on the furnace flue gas at locations downstream of the radiant sections of the furnaces and duct burner.
c. The oxygen analyzer shall continuously monitor and record the excess oxygen concentration in the combustion gases. The monitoring data shall be reduced to hourly average concentrations at least once every day using a minimum of four equally spaced data points over each one-hour period.
d. Permittee shall perform preventative maintenance check of the oxygen analyzer and document quarterly.
e. The oxygen analyzer shall be quality-assured at least once per quarter using cylinder gas audits (CGAs) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, § 5.1.2, with the following exception: a relative accuracy test audit is not required once every four quarters (i.e., two successive semiannual CGAs may be conducted).
f. Permittee will validate the oxygen analyzer with zero and span gas at least weekly to maintain 1% accuracy.
g. Excess oxygen shall be controlled to less than 3%.
h. All analyzers identified in section IV.A.1. & 2 shall achieve 95% on-stream time or greater.
i. Permittee shall utilize insulation materials where feasible to reduce heat loss.

j. The reformer furnaces shall not exceed the one-hour maximum firing rate of 2200 MMBtu/hr and shall be determined daily.
k. Permittee shall continuously monitor and record the stack (EPN STK41) gas exhaust temperature hourly and limit the temperature to less than or equal to 422 °F on a 365-day rolling average. This stack temperature is for normal operations and does not include commissioning, startup, and shutdown.
l. Permittee shall perform an initial performance test and show a thermal efficiency of 88%. The thermal efficiency will be calculated from these parameters using equation G-1 from American Petroleum Institute (API) methods 560 (4th ed.) Annex G, or an equivalent method approved by EPA. See Appendix A for the thermal efficiency methodology for the reformers.
m. The reformers shall be continuously monitored for exhaust temperature, input fuel temperature, and stack oxygen to ensure the optimum thermal efficiency.
n. OCI will demonstrate compliance with the CO_2 limit for the reformers based on metered fuel consumption, using the emission factors for natural gas from 40 CFR Part 98, Subpart C, Table C-1, and equation C-5, converted to short tons.
o. OCI will also calculate the CH_4 and N_2O emissions based on the default emission factors contained in 40 CFR Part 98, Subpart C, Table C-2 and equation C-8b, converted to short tons.
p. The CO_2e emissions will be based on procedures and Global Warming Potentials (GWP) contained in the Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, effective January 1, 2014 (78 FR 71904, Table 1-A). The relevant GWP values include: CO_2 =1; CH_4 = 25; N_2O = 298.
q. The CO_2e mass emissions shall be calculated on a monthly basis and divided by the metric tons of methanol produced during the month. The resulting quotient is added to the 12-month rolling average and compared to the BACT requirement to determine compliance with the BACT limit.
r. Records of the calculations will be required to be kept on-site and made readily available for inspection to demonstrate compliance with the BACT emission limits on a 12-month rolling average for the CO_2e limit.
s. As an alternative, OCI may install, calibrate, and operate a CO_2 CEMS and volumetric stack gas flow monitoring system with an automated data acquisition and handling system for measuring and recording CO_2 emissions. If this alternative is selected, the calculations shall be in accordance with the methodologies provided in 40 CFR § 98.33(a)(4).

3. Reformer MSS Flare (EPN FL42)

a. The flare shall be designed to achieve a minimum destruction and removal efficiency (DRE) of 99% based on flow rate and gas composition measurements.
b. The flare shall only combust pipeline natural gas in the pilots as a continuous stream.
c. The flare shall be designed and operated in accordance with 40 CFR 60.18 including specifications of minimum heating value of the waste gas, maximum tip velocity, and pilot flame monitoring. An infrared monitor is considered equivalent to a thermocouple for pilot flame monitoring purposes.
d. The only process gases flowing continuously to the flare are from the stripper tails tank vent gas. Sweep gas (natural gas) for maintaining maximum destruction efficiency will be used as necessary.

e. A flare header flow meter will measure flow at least once each 15 minutes. The flow meter shall be calibrated at least biannually.
f. The flare shall be equipped with a gas composition analyzer. The analyzer shall measure the gas composition at least once per hour and be calibrated monthly.
g. Permittee must record the time, date, HHV in MMBtu/hr and duration of each MSS event. The records must include hourly CH_4 emission levels as measured by the in-line gas analyzer (Gas chromatograph or equivalent with volumetric stack gas flow rate) and the calculations based on the actual heat input for the CO_2, N_2O, and CH_4 emissions during each MSS event. These records must be kept for five years following the date of each event.
h. CO_2 emissions are calculated using equation Y-1 found in 40 CFR §98.253(b)(1)(ii)(A). CH_4 and N_2O emissions are calculated using equations Y-4 and Y-5 as found in 40 CFR Part 98, Subpart Y.
i. Compliance with the annual emission limit shall be determined on a 12-month rolling total basis.

4. Process Fugitives (MET- FUG247)

a. Permittee shall implement the TCEQ 28VHP leak detection and repair (LDAR) program for fugitive emissions of methane.
b. Permittee shall implement an as-observed AVO program to monitor for fugitive emissions between instrumented monitoring as required in IV.A.4.a above.
c. Permittee shall use high quality components and materials of construction that are compatible with the service in which they are employed.

V. RECORDKEEPING AND REPORTING

In order to demonstrate compliance with the GHG emission limits the Permittee will monitor the following parameters and summarize the data on a calendar month basis.

a. Operating hours for all GHG air emission sources;
b. The fuel usage for all combustion sources, using continuous fuel flow monitors for each combustion unit (including the SCR duct burner); and
c. Semi-annual fuel sampling for natural gas, daily fuel sampling of plant fuel gas, or other frequencies as allowed by 40 CFR §98.34(b)(3) as specified in the previous sections.
d. Permittee shall maintain a file of all records, data, measurements, reports, and documents related to the operation of the facility, including, but not limited to, the following: all records or reports pertaining to significant maintenance performed on any system or device at the facility; duration of startup, shutdown; the initial startup period for the emission units; pollution control units; malfunctions; all records relating to performance tests, calibrations, checks, and monitoring of combustion equipment; duration of an inoperative monitoring device and emission units with the required corresponding emission data; and all other information required by this permit recorded in a permanent form suitable for inspection. The file must be retained for not less than five years following the date of such measurements, maintenance, reports, and/or records.

e. Permittee shall maintain records and submit a written report of all excess emissions to EPA semi-annually, except when: more frequent reporting is specifically required by an applicable subpart; or the Administrator or authorized representative, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. The report is due on the 30th day following the end of each semi-annual period and shall include the following:

   i. Time intervals, data and magnitude of the excess emissions, the nature and cause (if known), corrective actions taken and preventive measures adopted;
   ii. Applicable time and date of each period during which the monitoring equipment was inoperative (monitoring down-time);
   iii. A statement in the report of a negative declaration; that is; a statement when no excess emissions occurred or when the monitoring equipment has not been inoperative, repaired or adjusted;
   iv. Any failure to conduct any required source testing, monitoring, or other compliance activities; and
   v. Any violation of limitations on operation.

f. Excess emissions shall be defined as any period in which the facility emissions exceed a maximum emission limit set forth in this permit, or a malfunction occurs causing an emissions exceedance.
g. Excess emissions indicated by GHG emission source certification testing or compliance monitoring shall be considered violations of the applicable emission limit for the purpose of this permit.
h. Instruments and monitoring systems required by this PSD permit shall have a 95% on-stream time on an annual basis.
i. All records required by this PSD permit shall be retained for not less than 5 years following the date of such measurements, maintenance, and reporting.
j. Continuously means individual measurement no less frequent than once every 15 minutes. Electronic data may be reduced to hourly averages for recordkeeping purposes.

VI. INITIAL PERFORMANCE TESTING REQUIREMENTS

The Permittee shall perform stack sampling and other testing to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the EPN STK 41 to determine the initial compliance with the CO_2 emission limits.

a. Sampling shall be conducted in accordance with 40 CFR § 60.8 and EPA Method 3a or 3b for the concentration of CO_2.
b. Multiply the CO_2 hourly average emission rate determined under maximum operating test conditions by 8,760 hours.
c. If the above calculated CO_2 emission total does not exceed the tons per year (TPY) specified on Table 1, no compliance strategy needs to be developed.
d. If the above calculated CO_2 emission total exceeds the tons per year (TPY) specified in Table 1, the facility shall:

i. Document the potential to exceed in the test report; and
ii. Explain within the report how the facility will assure compliance with the CO_2 emission limit listed in Table 2.

1. An initial performance test to determine the 88% thermal efficiency of the reformer units will be done at 75% and 95% firing rate of the reformers and with the SCR duct burner.

2. The tests should also determine compliance with the BACT methanol output limit of 33 MMBtu (LHV)/MT. The calculations to determine the thermal efficiency methodology of the reformers is in the attached Appendix A.

3. Permittee shall submit a performance test protocol to EPA no later than 30 days prior to the test to allow review of the test plan and to arrange for an observer to be present at the test. The performance test shall be conducted in accordance with the submitted protocol, and any changes required by EPA.

4. The owner or operator must provide the EPA at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the EPA the opportunity to have an observer present and/or to attend a pre-test meeting. If there is a delay in the original test date, the facility must provide at least 7 days prior notice of the rescheduled date of the performance test.

5. No later than 180 days after initial start-up, or restart after modification of the facility, performance test(s) must be conducted and a written report of the performance testing results furnished to the EPA with 60 days after the testing is completed. During subsequent operations, stack sampling shall be performed within 120 days if current production rates exceed the production rate during stack testing by 10 percent or greater, additional sampling may be required by TCEQ or EPA.

6. Performance tests must be conducted under such conditions to ensure representative performance of the affected facility. The owner or operator must make available to the EPA such records as may be necessary to determine the conditions of the performance tests.

7. The owner or operator shall provide, or cause to be provided, performance testing facilities as follows:

   a. Sampling ports adequate for test methods applicable to this facility,
   b. Safe sampling platform(s),
   c. Safe access to sampling platform(s), and
   d. Utilities for sampling and testing equipment.

8. Unless otherwise specified, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For purposes of determining compliance with an applicable standard, the arithmetic mean of the results of the three runs shall apply.

9. Emissions testing, as outlined above, shall be performed every five years, plus or minus 6 months, of when the previous performance test was performed, or within 180 days after the issuance of a permit renewal, whichever comes later to verify continued performance at permitted emission limits.

VII. AGENCY NOTIFICATIONS

Permittee shall submit GHG permit applications, permit amendments, and other applicable permit information to:

Multi Media Planning and Permitting Division
EPA Region 6
1445 Ross Avenue (6 PD-R)
Dallas, TX 75202

Email: Group R6AirPermits@EPA.gov

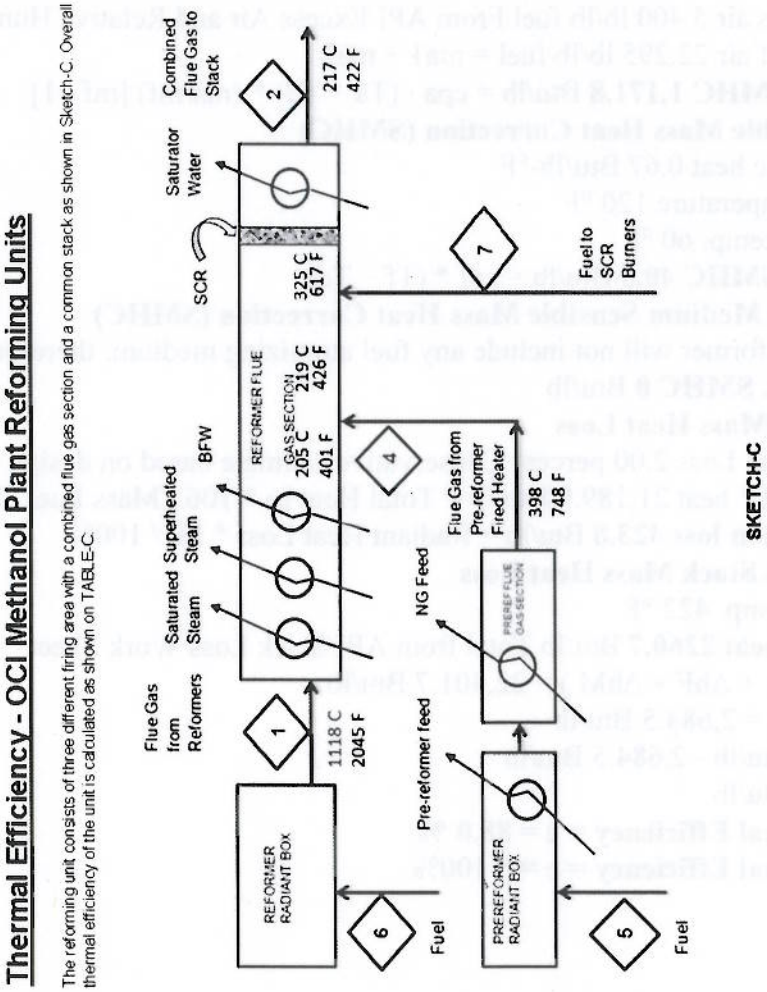
Permittee shall submit a copy of all compliance and enforcement correspondence as required by this Approval to Construct to:

Compliance and Enforcement Division

EPA Region 6
1445 Ross Avenue (6EN)
Dallas, TX 75202

Appendix A

Thermal Efficiency Sketch for the OCI Reformer Units



Net Efficiency based on ANSI/API Standard 560/ISO 13705, Equation G.1
OCI Beaumont, LLC - GHG Permit Application
Site-specific Calculations for OCI Beaumont Reforming System
hL, fuel LHV heat 21,189.9 Btu/lb Total from API Combustion Work Sheet
Air Sensible Mass Heat Correction (SMHC)
cpa, specific heat 0.24 Btu/lb-°F
Ta, air temperature 279.0 °F
Td, datum temp. 60 °F
ma1, required air 16.895 lb/lb fuel From API Excess Air and Relative Humidity Worksheet
ma2, excess air 5.400 lb/lb fuel From API Excess Air and Relative Humidity Worksheet
ma, mass of air 22.295 lb/lb fuel = ma1 + ma2
ΔhA, air SMHC 1,171.8 Btu/lb = cpa · (Ta − Td) * (ma/mf) [mf =1]
Fuel Sensible Mass Heat Correction (SMHC)
cpa, specific heat 0.67 Btu/lb-°F
Tf, fuel temperature 120 °F
Td, datum temp. 60 °F
ΔhF, fuel SMHC 40.0 Btu/lb = cpf * (Tf − Td)
Atomizing Medium Sensible Mass Heat Correction (SMHC)
The OCI reformer will not include any fuel atomizing medium; therefore, this value is zero.
ΔhM, med. SMHC 0 Btu/lb
Radiation Mass Heat Loss
Radiant Heat Loss 2.00 percent Conservative estimate based on design
hL, fuel LHV heat 21,189.9 Btu/lb = Total Heat In * 106 / Mass Fuel Flow
hR, radiation loss 423.8 Btu/lb = Radiant Heat Loss * hL / 100%
Calculated Stack Mass Heat Loss
Te, stack temp. 422 °F
hS, stack heat 2260.7 Btu/lb Total from API Stack Loss Work Sheet
(hL + ΔhA + ΔhF + ΔhM) = 22,401.7 Btu/lb
(hR + hS) = 2,684.5 Btu/lb
22,401.7 Btu/lb - 2,684.5 Btu/lb
22,401.7 Btu/lb
Net Thermal Efficiency = e = 88.0 %
Net Thermal Efficiency = e = * 100%